

L 3498-66

ACCESSION NR: AP5024860

investigation by means of which new findings on this subject have been obtained. Specimens of Ti sponge were microscopically examined following their treatment with pore-filling rosin and subsequent polishing with abrasive powders and etching for 1 min in a solution of 10 cc HF, 30 cc HNO₃ and 50 cc H₂ at room temperature for 1 min. The specimens pertained to three different sponges produced at different rates of feed of TiCl₄ to the reactor. Findings: in sponge 1 (TiCl₄ feed rate: 150 kg/m²-hr) irregularly shaped pores of from 40-60 to 100-150 μ predominate, with most of the pores having smooth (round) contours; in sponge 2 (TiCl₄ feed rate: 230 kg/m²-hr) the micropore size is more uniform; in sponge 3 (TiCl₄ feed rate: 320 kg/m²-hr) the micropore size is from 5 to 250 μ and the size distribution is as irregular as in sponge 1. On the whole, sponge porosity increases with increasing TiCl₄ feed rate, while at the same time the character of pores changes -- they become more irregularly shaped, with "lacerated" contours. This indicates an increase in the crystallization rate of Ti and a decrease in the effectiveness of recrystallization processes. Sections of sponge 1 reveal two basic structural varieties of the α -modification of Ti -- polyhedral (mostly equiaxial from 20-30 to 100-150 μ) and elongated acicular grains; this pattern is less distinctive for sponge 2. The visually observable dendrites of the titanium sponge proved, on microscopic examination, to have a polycrystalline structure, they

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clearly underwent complete recrystallization, i.e. only the external remains of dendritic structures have survived. It is thus concluded that the change in the rate of feed of $TiCl_4$ to the reactor not only alters the extent and character of porosity of the sponge but also is accompanied by changes in the micro-structure of Ti itself. It should be considered that the sponge investigated was subjected to the vacuum separation process, and hence the changes in sponge structure that were caused by change in the regime of reduction were offset to some extent by the subsequent changes in the structure of the sponge during its separation. Orig. art. has: 2 figures.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: MM

NO REF SOV: 005

OTHER: 000

Card

3/3 DP

L 05253-67

ACC NR: AP6018925

inverse correlation in the readings of θ (the stability factor) and L (the absorption factor) is observed at noon time, and a direct correlation during morning and evening hours. On a seasonal basis, maximum values for θ coincide with maximum L readings during the summer period. When measured over many years, an inverse correlation is observed for θ and W and a direct correlation is noted for L and W. Since no unique dependence is found between θ and L, this is taken to mean that an increase in the factor describing the pattern with which reflections are received from the E_s layer as solar activity decreases cannot be explained by reduced absorption alone. Orig. art. has: 4 figures.

SUB CODE: 08/ SUBM DATE: 17Jul65/ ORIG REF: 005

Card

2/2

gd

L 08739-61 EWT(1)/FCC GW

ACC NR: AF7001645

SOURCE CODE: UR/0203/66/006/004/0793/0794

AUTHOR: Chavdarov, S. S.; Chernysheva, S. P.

ORG: Rostov-on-Don State University (Rostovskiy-na-Donu gosudarstvennyy universitet)

TITLE: Change of the parameters of E_s in the solar cycle

SOURCE: Geomagnetizm i aeronomiya, v. 6, no. 4, 1966, 793-794

TOPIC TAGS: diurnal variation, solar activity

ABSTRACT:

It was demonstrated in an earlier paper that the ordinary probability of appearance of E_s at Rostov-on-Don does not reveal a relationship to solar activity, although its diurnal and seasonal variation obviously is controlled by the sun. However, the probability of appearance of E_s with a stipulated duration of continuous reflections of not less than two hours has a clear inverse dependence on the phase of the solar cycle, increasing in the years of minimum solar activity. In this paper an effort is made to check whether this pattern is unique for this station or also applied for other stations. Moscow was one of the stations selected for this purpose; Moscow coincides in longitude but differs considerably in latitude from Rostov-on-Don. For Moscow the authors computed the values of the ordinary probability of pE_s and the

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0724 1399

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ACC NR: AP7001645

probability of continuous reflections $(pE_s)\tau \gg \tau_0$ with a given duration with $\tau_0 = 2-20$ hours for frequencies $f \gg 1, 3, 5$ Mc/sec for March, June, September and December 1958-1964. The results give basis for assuming that the derived relationships between the changes of $(pE_s)\tau \gg \tau_0$ and the index of solar activity are not local phenomena for Rostov-on-Don, since the picture obtained on the basis of data for Moscow on the whole is similar to that obtained earlier for Rostov-on-Don.

Orig. art. has: 2 figures. [JPRS: 38,230]

SUB CODE: 04 / SUBM DATE: 17Jan66 / ORIG REF: 001

Card: 2/2 bc

AKSARIN, A.V.; ANAN'YEV, A.P.; BENEDIKTOVA, R.N.; GORBUNOV, M.G.; GRATSLANOVA, R.T.; YEGOROVA, L.I.; IVANIYA, V.A.; KRAYNEVSKAYA, L.N.; KRASHOPNYEVA, P.S.; LEBEDEV, I.V.; LOMOVITSKAYA, M.P.; POLETAYEVA, O.K.; ROGOZIN, L.A.; RADCHENKO, G.P.; RZHONSNITSKAYA, M.A.; SIVOV, A.G.; POMICHEV, V.D.; KHALFINA, V.K.; KHALFIN, L.L.; CHERNYSHEVA, S.V.; NIKITINA, V.N., redaktor; GUROVA, O.A., tekhnicheskiy redaktor

[Atlas of leading forms of fossils in the fauna and flora of Western Siberia] Atlas rukovodiashchikh form iskopaemykh fauny i flory zapadnoi sibir. Pod red. L.L.Khalfina. Moskva, Gos. nauchno-tekhn.izd-vo lit-ry po geologii i okhrane nedr, Vol.1. 1955. 498 p. Vol.2. 1955. 318 p. [Microfilm] (MLRA 9:3)

1. Tomsk. Politekhicheskiy institut imeni Kirova.
(Siberia, Western--Paleontology)

CHERNYSHEVA, S.V.; YEREMIN, P.P.

Using high-frequency current heating for improving the thermal
stability of piston pins. Avt.prom. no.2:40-41 F '60.
(MIRA 13:5)

1. Ural'skiy avtosavod.
(Steel--Heat treatment) (Pistons)

1.1710 also 1454, 1045, 1413

S/113/60/000/002/008/009
D207/D306

AUTHORS: Chernysheva, S. V. and Yereimin, F. I.

TITLE: The heat treatment of piston pins by high-frequency induction heating

PERIODICAL: Avtomobil'naya promyshlennost', no. 2, 1960, 40-41

TEXT: The Ural'skiy avtozavod (Urals Automobile Plant) has developed and introduced a new technological process for the heat treatment of piston pins by induction heating. Treatment is carried out with a semi-automatic unit from a 250-kwt 2,500-cycle mechanical generator. The semi-automatic unit consists of an inductor, a loader and a hardening device. The latter has a 6-spindle head, each head rotating at 500 rpm while the piston pin revolves at 400 rpm. After receiving the piston pin the spindle pauses for 3 seconds (to allow the temperature to even out throughout the length and section of the pin) and then feeds it successively into the first and second split sprays for cooling to 250-300°C. Rotation and cooling to this temperature prevents the formation of

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CHERNYSHEVA, S.V.

Tollicyathus, a new genus of Archaeocyatha. Trudy SNIGGIMS
no.8:77-78 '60. (MIRA 15:9)
(Altai Mountains--Archaeocyathidae)

VINKMAN, M.K.; GINTSINGER, A.B.; POSPELOV, A.G.; POLETAYEVA, O.K.;
YEGOROVA, L.I.; ROMANENKO, M.P.; FEDYANINA, Ye.S.; ASTASHKIN, V.A.;
CHERNYSHEVA, S.V.; ROMANENKO, Ye.V.; ASKARINA, N.A.; BOYARINOV, A.S.;
NADLER, Yu.S.; GORELOV, G.F.

Scheme of the stratigraphy of Lower Cambrian and the lower part of
Middle Cambrian sediments in the Altai-Sayan fold area. Trudy
SNIIGGIMS no.24:23-34 '62. (MIRA 16:10)

1. CHERNYSHEVA, T.
2. USSR (600)
4. Construction Industry - Karelia
7. At a factory of cities. Rabotnitsa 31, no. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, May 1953, Unclassified.

L 08425-67 EWT(m)/EWP(y)/EWP(v)/EWP(t)/ETI/EWP(k) IJP(c) JD/HM/JG/QD
ACC NR: AT6034449 (N) SOURCE CODE: UR/0000/66/000/000/0135/0139

AUTHOR: Klebanov, G. N.; Chernysheva, T. A. 32

ORG: none B1 18

TITLE: Test for evaluating the susceptibility of niobium-alloy welds to hot cracking 27

SOURCE: AN SSSR, Institut metallurgii. Svoystva i primeneniye zharoprochnykh splavov (Properties and application of heat resistant alloys). Moscow, Izd-vo Nauka, 1966, 135-139

TOPIC TAGS: niobium alloy, ~~metal~~ welding, ~~metal~~ weld, weld hot cracking, hot cracking susceptibility, *weld heat treatment*

ABSTRACT: A new testing method for evaluating the susceptibility of niobium-alloy welds to hot cracking has been proposed. The test specimens are made of niobium-alloy sheets 1 mm thick and 50 or 80 mm wide with a narrow slit cut in them (see Fig. 1). A weld bead is deposited on the specimen in such a way that the center line of the weld goes through the end of the slit. The rate of deformation is determined by measuring the speed at which the slit opens. The deformation rate increases with increasing length of the weld between the starting point and the slit and with increasing welding speed. The criterion of weld

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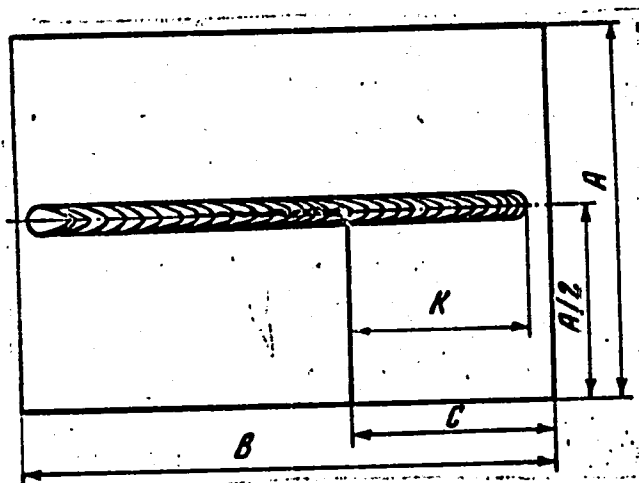


Fig. 1. Test specimen for evaluating the susceptibility of niobium-alloy welds to hot cracking.

resistance to hot cracking is the maximum length of the weld at which cracking does not occur. The test has been successfully applied to a series of niobium alloys. Orig. art. has: 4 figures.

SUB CODE: 11, 13/ SUBM DATE: 10Jun66/ ATD PRESS: 5103

Cord 2/2. 18

YAKHININA, N.A.; LADYGINA, V.Ye.; KABANOVA, Ye.A.; CHERNYSHEVA, T.F.

Enteropathogenic Escherichia coli in premature children. Vop.
okh. mat. i det. 8 no.7:7-11 JE '63. (MIRA 17:2)

1. Iz Instituta epidemiologii i mikrobiologii imeni N.F. Gamalei
(direktor - prof. P.A. Vershilova) AMN SSSR i otdeleniya nedono-
shennykh i patologii novorozhdennykh detey (zav. Ye.Ch. Novikova)
Instituta pediatrii (direktor - dotsent M.Ya. Studenikin) AMN SSSR.

CA CHERNYSHEVA, T. I.

Synthesis of 1-methyl-2-methyl-2-pyrrolidone. A. D. Petrov and T. I. Chernysheva. *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1961; 830-2; cf. Gilman, et al., C.A. 44, 6827c. — The Grignard reagent from 207 g. 1-C₄H₉Br refluxed 6 hrs. with 140 g. Me₂SnCl₂ gave 41% chlorodimethyl-1-methyl-2-pyrrolidone, b. 320-5°, d₄²⁰ 1.1803, n_D²⁰ 1.5051, 41 g. of which, refluxed 6 hrs. with MeMgCl from 10 g. Mg, gave 45% trimethyl-1-methyl-2-pyrrolidone, b. 118-19°, m. 21.5°, d₄²⁰ 0.9871, n_D²⁰ 1.3730; Me₂SnCl₂ and C₄H₉MgBr gave 7.1% C₄H₉SiF₃, while passage of SiF₄ (from 60 g. NaSiF₆) into 1-C₄H₉MgBr (from 140 g. RBr), refluxing 14 hrs., and heating 2 hrs. after removal of the H₂O gave some 22% (1-C₄H₉)₂SiF₂, b. 810-12°, m. 78-81°, which with MeMgI gave 1-C₄H₉SiMe₂ in unstated yield. G. M. Kosolapoff

CHERNYSHEVA, T. I.

USSR/Chemistry - Organosilicon Compounds 21 May 52

"Synthesis 9-Trialkylsilyl, Di-9, 10-Trialkylsilyl Dithroanthracenes and Certain Other Arylsilanes," A. D. Petrov, Corr Mem, Acad Sci USSR, T. I. Chernysheva

"Dok Ak Nauk SSSR" Vol LXXXIV, No 3, pp 515-518

Reference is made to previous research wherein a series of a-naphthylsilanes and xenylsilanes were synthesized. It was observed, in regard to the alkylxenylsilanes and alkynaphthylsilanes, that both the freezing and melting points are depressed in passing from $C_{12}H_9Si(CH_3)_3$ to $C_{12}H_9Si(C_6H_5)_3$. Where the

225T5

freezing points of $\alpha-C_{10}H_7Si(C_6H_5)_3$ and $C_{12}H_9Si(C_6H_5)_3$ are practically the same, the freezing and melting points of the primary members of the silicon hydrocarbon series are sharply dissimilar. A complex relationship apparently exists between the structure of the silicon hydrocarbons and their freezing and melting points. The point is made of the utilization of the reaction developed by B. M. Mikheylov, between alkyl halides and 9,10-dithium-9,10-dihydroanthracene, wherein the alkyl halides are replaced by the silicohalides.

(BA-711 Ap 53:584)

225T5

CHERNYSHEVA, T. I.

Dissertation: "Lithium Organic Synthesis of Arylsilanes and the Overcoming of Steric Hindrances of this Synthesis." Cand Chem Sci, Moscow Chemicotechnological Inst imeni D. I. Mendeleyev, Moscow, 1953. Referativnyy Zhurnal—Khimiya, Moscow, No 7, Apr 54.

SO: SUM 284, 26 Nov 1954

Chernysheva 1.1.

✓ The synthesis of 1,4-ditrialkylsilyl-1,4-dihydronaphthalenes, mono- and ditrialkylsilylhydroxyis and tetra-
naphthylsilane. A. D. Petrov and T. I. Chernysheva.
Doklady Akad. Nauk S.S.S.R. 89, 498-499 (1983). 9.12.
Dihydro-9-trialkylsilyl-10-trialkylsilylanthracene where alkyl
= Me (I) and Bu (II) were prepd. as in C.A. 47, 3288g.
I, b.p. 215-20°, d₄ 1.016, n_D²⁰ 1.5778, was mol.-distd. at
10⁻⁴ mm. to give 8 g. "monosilane" at 130-40°, and 14.6 g.
disilane (C₁₁H₂₁Si) at 140-50°, d₄ 1.0011, n_D²⁰ 1.5725.
II, mol.-distd. at 10⁻⁴ mm. (140-50°), d₄ 0.9748, n_D²⁰ 1.5621.
Adding 5 g. I and 100 ml. abs. Et₂O to 20 g. Ph₃, heating
on the water bath (glass beads), shaking 14 days, cooling,
adding 80 g. Me₂SiCl₂, heating 1 hr. on a H₂O bath, shaking 6
hrs., adding water, sepg. the Et₂O layer, and distg. gave 8.5
g. Ph₃ and 7.6 g. 1,4-dihydro-1-phenyl-1-trimethylsilylben-
zene, b. 173-8°, d₄ 0.9072, n_D²⁰ 1.5538. Similarly was
prepd. 54% 1,4-dihydro-1-phenyl-1,4-bis(tributylsilyl)benzene
b.p. 213-20°, d₄ 0.8692, n_D²⁰ 1.4771, and the following 1,4-
ditrialkylsilyl-1,4-dihydronaphthalenes (alkyl, b.p., d₄, and
n_D²⁰ given): Me, b.p. 152-5, 0.9444, 1.5329; Et, b.p. 157-60°
(b.p. 120-3°), 0.9319, 1.5163; Bu, b.p. 250-3°, 0.9057,
1.5096. Adding 7 g. (α-C₁₀H₇)₂SiF₂ in Et₂O to 33 g. Li α-
naphthyl, the mixt. heated 2 hrs. on the steam bath, then
25 hrs. with kerosene (230-50° fraction) on an oil bath,
Et₂O and H₂O added to the cooled product, the Et₂O distd.,
the C₁₀H₇ steam distd., the residue boiled in a mixt. of
petr. ether and CHCl₃, and the undissolved portion filtered
off and recrystd. from hot C₆H₆ gave (α-C₁₀H₇)₂SiF₂, m. 224°.
On concn. by evapn. a brown ppt. was obtained which was
yellow even after repeated recrystn. m. 100-10°. This
dissolved in a mixt. of petr. ether and CHCl₃, and chromato-
graphed on Al₂O₃ gave tetra(α-naphthyl)silane, white crys-
tals, m. 279-80°.

Gary Geraud

CHERNYSHEVA, T. I.

USSR/Organic Chemistry - Synthetic Organic Chemistry, E-2

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61590

Author: Petrov, A. D., Chernysheva, T. I.

Institution: None

Title: Synthesis of Tetraisobutyl-, Tetraisopropyl-, Tetracyclohexyl- and Tetra- -naphthylsilane

Original

Periodical: Zh. obshch. khim., 1954, 24, No 7, 1189-1192

Abstract: For syntheses of R_4Si were utilized silane fluorides and organic Li-compounds. Synthesized for the first time were $(\alpha-C_{10}H_7)_4Si$ (I), $(iso-C_3H_7)_4Si$ (II), tetracyclohexylsilane (III) and $(C_6H_5)_4Si$ (IV). To an ether solution of $\alpha-C_{10}H_7Li$ (from 0.14 mol $\alpha-C_{10}H_7Br$ and 0.2 g-atom Li) added dropwise ether solution of 0.02 mol $(\alpha-C_{10}H_7)_2SiF_2$, heated 2 hours on water bath, 25 hours in oil bath (ether is replaced by kerosene, -250° fraction), isolated 0.3 g $(\alpha-C_{10}H_7)_3SiF$, MP 224° (from C_6H_6) and I, yield 24.6%, MP $279.6-280.1^\circ$. II prepared from C_3H_7Li (1 mol $iso-C_3H_7Cl$ and 2.3 g-atom

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USSR/Organic Chemistry - Synthetic Organic Chemistry, E-2

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61590

Abstract: Li) and 0.2 mol (iso-C₃H₇)₃SiF in absolute ether; after heating for 26 hours, isolated II, yield 23.8%. BP 220-228° (fraction 222-224° has n_D²⁰ 1.4472 and d₄²⁰ 0.8006). Tricyclohexyl-butyl silane (V) prepared from C₄H₉Li (0.22 mol C₄H₉Br and 0.43 g-atom Li) and 0.04 mol tricyclohexyl fluorosilane in absolute ether. Heated 16 hours on water bath and 5 hours in oil bath (ether replaced by kerosene, fraction 200-220°); yield of V 21.9%, BP 365-370°, MP 133-135°. III prepared from lithium cyclohexyl (VI) (0.89 mol C₆H₁₁Cl and 2 g-atom Li) and cyclohexyl difluorosilane in absolute ether on heating for 10 hours on water bath and 11 hours in oil bath (with kerosene fraction 190-200°); yield of III 11.3%; a 7.95% yield of III was also obtained from VI and SiF₄, MP 196-198°. IV prepared from C₄H₉Li (0.29 g-atom Li and 0.27 mol iso-C₄H₉Cl) and 0.1 mol tri-isobutyl fluorosilane in absolute ether, yield 63.2%, BP 248-250°/767.6 mm, n_D²⁰ 1.4431, d₄²⁰ 0.7910.

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CHERNYSHEVA, T. I.

USSR/Organic Chemistry - Synthetic Organic Chemistry, E-2

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61592

Author: Petrov, A. D., Chernysheva, T. I., Chernyshev, Ye. A.

Institution: None *Inst. Org. Chem Acad Sci USSR*

Title: On the Stability of Si-C Bond of Aromatic and Hydroaromatic Silanes Toward Action of Acid Reagents

Original

Periodical: Zh. obshch. khimii, 1956, 26, No 1, 138-142

Abst. act: Investigation of the interaction of 1,4-di-(tributylsilyl)-1,4-dihydrobiphenyl (I), 1,4-di-(triethylsilyl)-1,4-dihydro-naphthalene (II), 9,10-di-(triethylsilyl)-9,10-dihydroanthracene (III), triethyl-biphenylsilane (IV) and triethyl-naphthylsilane (V) with 20% HCl, dry HCl in glacial CH_3COOH and AlCl_3 . On boiling HCl breaks down 89% of Si-C bond in V, while the other compounds undergo no change. With dry HCl the reaction was carried out under standard conditions utilized to study the stability of Si-C bond. % of decomposition: V 84; IV 43; III 72 (decomposition product consists of 80% anthracene

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USSR/Organic Chemistry - Synthetic Organic Chemistry, E-2

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61592

Abstract: and 20% dihydroanthracene); II 10 (naphthalene is the decomposition product); I is not changed, $AlCl_3$ (15-25°, 15 hours) effects a quantitative cleavage of Si-C bond; concurrently with decomposition takes place a quantitative dehydration.

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[illegible]

Similar reaction of III with HfCl_4 gave 81% $\text{C}_6\text{H}_5(\text{SiPh})_3$, b_p 112–13°, 0.8241, 1.4628. Similarly was obtained 60.9% $\text{C}_6\text{H}_5(\text{SiPh})_3$, b_p 210–12°, 0.8400, 1.4680. Heating 10 g. $\text{Ph}_3\text{SiCH}_2\text{CH}_2\text{CH}_2\text{Cl}$, 28 g. Ph_3SiH , and 1 g. ZrCl_4 in heptane 10 hrs. at 100° gave 86.4% $\text{C}_6\text{H}_5(\text{SiPh})_3$, m_p 208.5–10°. Similarly $\text{Me}_2\text{Si}(\text{CH}_2\text{CH}_2\text{CH}_2\text{Cl})_2$ and Ph_3SiH gave 2.8% $\text{C}_6\text{H}_5(\text{SiMe}_2\text{SiPh})_2$ in 17.5 hr.

G M Kuznetsov

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Syntheses of some compounds of silicon with cyclopentyl radicals. M. S. Nametkin, A. V. Topolov, and I. I. Chernyshev, *Doklady Akad. Nauk S.S.S.R.* 111, 12 (1957). Compounds with Si-H bonds were added to an autoclave with B_2O_3 or ultraviolet light catalyst. Ultraviolet irradiation of 41 g. cyclohexene and 35.3 g. $HSiCl_3$ for 40 hrs. gave 21% $C_5H_9SiCl_3$; 50 g. cyclohexene and 94 g. $HSiCl_3$ with 4 g. B_2O_3 in 33 hrs. at 60° gave 57.9% $C_5H_9SiCl_3$, b_p $164-6^\circ$, d_4 1.2290, n_D^{20} 1.4798. 1-Methylcyclopentene and $HSiCl_3$ in 65 hrs. at 80° with ultraviolet irradiation gave 13.8% 2-methylcyclopentyltrichlorosilane, b_p $80-2^\circ$, d_4 1.2114, n_D^{20} 1.4716. Cyclohexene (21 g.) and 17.8 g. $HSiBr_3$ in 48 hrs. at 80° with ultraviolet irradiation gave 70% cyclohexyltribromosilane, b_p $134-6^\circ$, d_4 1.5840, n_D^{20} 1.5887. With B_2O_3 the yield was 28.1%. Heating 40 g. cyclohexene with 57 g. $MeSiHCl_2$ and 0.3 g. Pt-C in autoclave 5 hrs. at 200° gave 19.7% $C_5H_9SiMeCl_2$, b_p $200-5^\circ$, d_4 1.0373, n_D^{20} 1.4718. Cyclohexene and $EtSiHBr_2$ heated with B_2O_3 15 hrs. at 80° gave 44% $C_5H_9SiEtBr_2$, b_p $150-2^\circ$, d_4 1.5320, n_D^{20} 1.5167; similarly $EtSiHCl_2$ gave 10.7% $C_5H_9SiEtCl_2$, b_p $101-3^\circ$, d_4 1.0785, n_D^{20} 1.4749. The halogen derivs. treated with Li and alkyl halides gave conventional alkylation products: $C_5H_9SiMe_2$, b_p $84-5^\circ$, $m.$ -98.5° , n_D^{20} 1.4457, d_4 0.8231; $C_5H_9SiEt_2$, b_p $236-8^\circ$, $m.$ -83.7° , n_D^{20} 1.4361, d_4 0.8476; $C_5H_9SiPr_2$, b_p $128-30^\circ$, $m.$ -70.5° , n_D^{20} 1.4684, d_4 0.8483 (47% yield only); $C_5H_9SiBu_2$, b_p $142.5-3^\circ$, $m.$ -62° , n_D^{20} 1.4700, d_4 0.8494; 2-methylcyclopentyltrimethylsilane, b_p $169-5^\circ$, n_D^{20} 1.4461, d_4 0.8160; 2-methylcyclopentyltributylsilane, b_p $136-40^\circ$, $m.$ -69° , n_D^{20} 1.4074, d_4 0.8480; $C_5H_9SiPh_3$, b_p 230° , $m.$ 227° (20% yield only, obtained by heating 10 g. cyclohexene and 32 g. Ph_3SiH at $160-70^\circ$ in an ampul 12 hrs. with 0.2 g. Pt-C).

G. M. Kosolapoff

Ina R.M.

20-2-35/62

Synthesis of some Alkylhaloidsilanes and Silicon Hydrocarbons.

amyltrichlorosilane was only slightly increased. On comparing the yields of addition products of trichloro- and tribromosilane on olefinic hydrocarbons a somewhat stronger activity of bromide may be found out. Similar tests with metadichlorosilane and nonane-1, or with decene-1, gave considerably smaller yields than in the case of addition of trichlorosilane on the same hydrocarbons. Silicon hydrocarbons were synthesized on the basis of the obtained alkylhaloidsilanes. In the experimental part the production methods, properties, formulae and yields (determined and calculated) of the following compounds are given: 1. isoamyltribromosilane, 2. isoamyltrichlorosilane, 3. nonyltribromo- and 4. nonyltrichlorosilane, 5. decyltribromo- and 6. decyltrichlorosilane, 7. hexadecyltrichlorosilane and 8. nonylmethyldichlorosilane. Finally the production methods of silicon hydrocarbons are described: 1. isoamyltrimethylsilane, 2. nonyltrimethylsilane, 3. nonylmethyldibutylsilane, 4. decylmethyldibutylsilane, 5. heptyl-, 6. nonyl-, 7. decyltributylsilane, and 8. hexyldecyltributylsilane.
(2 Tables, 3 Slavic references)

CARD 2/3

20-2-36/62
Synthesis of some Alkylhaloidsilanes and Silicon
Hydrocarbons.

ASSOCIATION: not given.
PRESENTED BY: -
SUBMITTED: 18.4. 56
AVAILABLE: Library of Congress.

CARD 3/3

20-3-28/59

CHERNYSHEVA, T.I.

AUTHORS: Topchiyev, A. V., Academician
 Nametkin, N. S., Chernysheva, T. I.

TITLE: The Addition of Dialkyl(phenyl)Silanes to Ethylene Hydrocarbons (O prisoyedinenii dialkil[fenil] silanov k etilenovym uglevodorodam).

PERIODICAL: Doklady AN SSSR, 1958, Vol. 118, Nr 3, pp. 517-519 (USSR).

ABSTRACT: First the authors give a short survey on papers concerning the said reaction (references 1-8). In the present work they investigated the addition reactions of diethyl-silane, dibutyl-silane, methyl-phenyl-silane and diphenyl silane to octene-1, nonene-1 and decene-1. They were carried out in sealed ampoules in the presence of platinized carbon. The addition of diethyl-silane and dibutyl-silane to octene-1 and nonene-1 (ratio 1:2) only took place with a Si-H bond. On the same conditions and the same ratio diphenyl-silane was added to decene-1 and formed diphenyl-decyl-silane with a yield of 61% + diphenyl-didecyl-silane with a yield of 10%. Dibutyl-silane is added to nonene-1 with formation of 6% dibutyl-dinonyl-silane only when their ratio is equal to 1:4, diphenyl-silane is added to decene-1 also in the presence of

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The Addition of Dialkyl(phenyl)Silanes to Ethylene Hydrocarbons. 20-3-28/59

benzoylperoxide, while this is not the case with diethyl-silane and octene-1. From table 1 can be seen that diethyl-silane and dibutyl-silane are added to olefines with half the yields as is the conclusion can be drawn that the Si-H bond in dihydric-silanes, containing phenyl-radicals, is more active than the same bond in dihydric-silanes with alkyl radicals. From dibutyl-nonyl silane and diphenyl decyl silane dibutyl-dinonyl-silane and diphenyl-nonyl-decyl-silane were produced by interaction with nonene-1. An experimental part with the usual data follows. There are 8 references, 5 of which are Slavic.

SUBMITTED: March 25, 1957

AVAILABLE: Library of Congress

Card 2/2

5(3)

AUTHORS:

Nametkin, N. S., Topchiyev, A. V., Academician,
Chernysheva, T. I., Kartasheva, L. I.

SOV/20-126-4-29/62

TITLE:

Investigation of the Reaction of Addition of Trialkoxy-
silanes to Olefines (Izucheniye reaktsii prisoyedineniya
trialkoksisilanov k olefinam)

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 4, pp 794-797
(USSR)

ABSTRACT:

Up to now there are no data in publications on the possibility of the reaction mentioned in the title. On the contrary, the opinion was held (Ref 1) that it does not take place, for instance in the case of octene-1 (initiation of the reaction with acetyl peroxide and exposure to ultraviolet rays). Only in the patent of G. Wagner (Ref 2) such a possibility is pointed out. The authors succeeded in proving the reaction mentioned in the title. This was done by means of the examples of the reciprocal action of tri-ethoxysilane, tri-isopropoxysilane, tributoxysilane, tri(secund.-butoxy)silane and tri(tert.-butoxy)silane with nonene-1 and decene-1 in the presence of platinum-hydrochloric acid and platinized coal. The physico-chemical properties of the original trialkoxysilane are shown

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Investigation of the Reaction of Addition of Trialkoxysilanes to Olefines

in table 1. The output amounted to 30-40%, except for tri(tert.-butoxy)silane. For the latter it was only 12%, due to the spatial restrictions. Table 2 shows the properties of the products. Decyl-tributoxysilane and nonyl-triisopropoxy-silane were also produced by means of the reciprocal action of nonyl-trichlorosilane and decyl-trichlorosilane with the corresponding alcohols. The identity of the substances produced in these two ways, is shown in table 3. This identity was also proved by means of the relative intensity and by means of the number of lines in the Raman spectra. The statement that in this case the addition takes place against Markovnikov's rule, is based on the comparison of the mentioned properties, or of the spectra. There are 3 tables and 3 references, 1 of which is Soviet.

ASSOCIATION: Institut neftekhimicheskogo sinteza Akademii nauk SSSR
(Institute for Petroleum-chemical Synthesis of the Academy of Sciences, USSR)

SUBMITTED: April 3, 1959

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5 (3)

AUTHORS:

Nametkin, N. S.; Topchiyev, A. V.,
Academician; Chernysheva, T. I.

SOV/20-126-5-24/69

TITLE:

On the Addition of Tribenzyl Silane to Olefins (O prisoye-
dinenii tribenzilsilana k olefinam)

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 5, pp 1001 - 1003
(USSR)

ABSTRACT:

In the course of the last few years an ever increasing atten-
tion has been called to the addition of the hydride-silanes to
unsaturated hydrocarbons. The extensive utilization of this re-
action has become possible owing to the introduction of new
catalysts (Refs 1-3). This report is a continuation of the au-
thors' investigation of the formation of monomeric organo-sili-
con compounds (Refs 4-10). In this case the addition of the
tribenzyl silane has been effected to the following substances:
pentene-1, hexene-1, octene-1, nonene-1 and decene-1. The ca-
talyt used was platinum hydrochloric acid. With ratios of ole-
fins: tribenzyl silane of 1:3 and 1:4 at 100-120° within 2-3
hours tribenzyl alkyl silanes have been obtained with yields of
50-60%. The products are viscous liquids with a high boiling
point. Their specific weight is lowered in proportion to the

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On the Addition of Tribenzyl Silane to Olefins

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increase of the alkyl-radical. This weight is more than unity with the tribenzyl pentyl silane and the tribenzyl hexyl silane. Table 1 reveals the properties of the substances produced. In order to clarify the succession of the additions mentioned in the title several tribenzyl-alkyl-silanes have been produced according to the reaction $\text{RSiCl}_3 + \text{C}_6\text{H}_5\text{CH}_2\text{Li} \rightarrow \text{RSi}(\text{CH}_2\text{C}_6\text{H}_5)_3$.

The agreement between the physico-chemical properties of the two series justifies the authors in asserting that under the conditions selected the addition takes place contrary to the Markovnikov law. (see scheme). There are 1 table and 11 references, 7 of which are Soviet.

ASSOCIATION: Institut neftekhimicheskogo sinteza Akademii nauk SSSR
(Institute for Petroleum-chemical Synthesis of the Academy of Sciences, USSR)

SUBMITTED: April 3, 1959

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15.8116

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S/190/61/003/006/019
E110/B216

AUTHORS:

Lyashenko, I. N., Nametkin, N. S., Polak, N. S.,
Topchiyev, A. V., Fel'dman, A. S., Chernysheva, T. I.

TITLE:

Catalytic and radiation polymerization and copolymerization
of allylhydridesilane derivatives

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 6, 1961, 833-840

TEXT: Unsaturated polymers with silicon-carbon links of the type
RCH=CHSiR₂H have lately become of great importance. Using platinized
carbon, the authors obtained the polymers: -SiCH₂CH₂SiCH₂CH₂Si- and
-SiCH₂CH₂CH₂SiCH₂CH₂CH₂Si-. In the present study, diethylallylsilane (I),
ethylphenylallylsilane (II), ethyldiallylsilane (III) and triallylsilane
(IV) were polymerized at atmospheric pressure catalytically and by the
radiation method and copolymerized with acrylonitrile and styrene.
Benzoyl peroxide was used as initiator, platinized carbon as catalyst and
β and γ rays for irradiation. On heating for 30 min, (IV) polymerized to
a white, powdery substance; (III) on heating for 10 hr at 150-200°C with
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S/170/61/003/006/006/019
R110/B216

Catalytic and radiation polymerization...

the initiator yielded a white, brittle substance; (II) with the initiator yielded a highly viscous liquid and (I) did not polymerize. The polymerizates of (III) and (IV) were insoluble in most organic solvents. The substituents of the alkenylsilane derivatives affect initiated (A) and radiation (B) polymerization in the same way. According to the type of radical linked to the silicon atom, the polymerizates are oily or solid substances. The tendency to polymerize increases with the number of alkyl groups. The degree of conversion increases with the introduction of phenyl groups. Alkyl substituted monoallylsilanes are difficult to polymerize by (A) or (B). Polymerization probably occurs by cleavage of the double bond, since the infrared spectrum showed the absence of double bonds. A clearly defined second component (Fig. 2a) (III) was found by electron paramagnetic resonance. Introduction of a phenyl group in (II) reduced the amount of this second component (Fig. 2b), and introduction of two phenyl groups in the case of diphenylallylsilane led to the disappearance of this component (Fig. 2c). Fig. 2 shows the epr spectrum of dimethylallylsilane, having no hydrogen at the silicon atom. The presence of free radicals in monomers irradiated at -196°C and the similarity of their infrared spectra with those of initiated monomers indicate radical

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B110/B216

Catalytic and radiation polymerization...

polymerization. Copolymerization of (I), (II), and (III) with acrylonitrile was carried out at various component ratios and γ -doses of $10 \cdot 10^6$ r. The copolymerizates obtained (Table 3) are not fusible below 300°C and char at 300°C . The weak or absent double bond band of the acrylonitrile copolymerizates of (III) and (IV), respectively, show that the allyl groups must have reacted in copolymerization to a certain extent in the case of (III) and quantitatively in that of (IV). Doses of $75 \cdot 10^6$ r at a rate of $0.6 \cdot 10^6$ r/hr were applied for radiation copolymerization of diphenylallylsilane, (II), (II) and styrene in varying ratios. Copolymerizate composition does not depend on the initial mixture, the organosilicon component varies between 11 and 17 %. Copolymerizates containing more than 10 % organosilicon components are viscous and elastic, at contents below 10 % they are solid. The copolymerizate of styrene with (IV) in the ratio 1:1 is a hard substance, m.p. 245°C . To 48 g (2 g-at.) of magnesium in dry ether was added a mixture of 121 g (1 mole) of ethyl bromide and 64.5 g (0.5 mole) of ethyldichlorosilane. Yield: 120 g (85 %) of diallylethylsilane b.p. $142-149^\circ\text{C}$ at 756 mm Hg. The other silanes were prepared accordingly. For polymerization, the silane derivatives (1 mole), together with benzoyl peroxide (0.1 mole)

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B110/B216

Catalytic and radiation polymerization...

were heated to boiling for 10 hr at atmospheric pressure. Polymer molecular weights were determined cryoscopically in benzene (Table 2). The silane derivatives were also heated for 10 hr with 15 % platinized carbon (1 g per mole silane). After 2 hr, the mixture was heated to 250°C. Triallylsilane was converted to a hard brittle powder within 30 min. Radiation polymerization was carried out in molybdenum glass tubes (10 and 20 ml) using a Co^{60} source of capacity 20,000 g-eq. Ra and electron accelerator of 800 kev. The γ -dose rate was $0.63 \cdot 10^6$ r/hr, irradiations being performed at $\sim 100^\circ\text{C}$ for homopolymerization and 20°C for copolymerization. The monomers and polymers were analyzed in a MKC-14 (IKS-14) spectrometer using NaCl prisms for the 2000-70 cm^{-1} range and LiF prisms for the 2000-2300 cm^{-1} range. Liquid monomers were examined in the undiluted state at a thickness of 0.014 mm. The epr spectra were taken in molybdenum glass tubes of 4 mm thickness at 196°C and -78°C at a dose rate of $15 \cdot 10^6$ r/hr. The authors thank M. P. Teterina for carrying out the spectroscopic analysis. There are 3 figures, 4 tables, and 8 references: 4 Soviet-bloc and 4 non-Soviet-bloc. The three references to English-language publications read as follows: Ref. 2: D. G. White, E. G. Rochow, J. Amer. Chem. Soc., 76, 3897, 1954. Ref. 4: Y. M. Curry,

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Catalytic and radiation polymerization...
 J. Amer. Chem. Soc., 78, 1686, 1956. Ref. 5: Y. M. Curry, J. Amer. Chem. Soc., 80, 1219, 1958.

5/190/61/003/006/006/019
 B110/B216

ASSOCIATION: Institut neftekhimicheskogo sinteza AN SSSR (Institute of Petrochemical Synthesis, AS USSR)

SUBMITTED: July 22, 1960

Table 1: Properties of allylsilane derivatives. 1) Monomers; 2) b.p., °C; 3) found; 4) calculated; 5) yield, %.

(1) Monomers	(2) T. m.p., °C (mm)	(3) n _D ²⁰	(4) d ₄ ²⁰	MRD		(5) Yield, %
				measured	calculated	
(C ₁₁ H ₁₇ SiH ₃)	126-127	1.4302	0.7530	43.00	43.00	50.4
(C ₁₁ H ₁₇ SiH ₃)	76-78(3)	1.5124	0.8035	50.21	50.24	50.3
(C ₁₁ H ₁₇ SiH ₃)	132-135(2)	1.5782	0.8951	74.40	74.52	62.0
(C ₁₁ H ₁₇ SiH ₃)	112-110	1.4503	0.7784	48.53	48.30	85.0
(C ₁₁ H ₁₇ SiH ₃)	42-44(2)	1.4682	0.8042	52.00	52.82	65.0

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S/832/62/000/000/001/015.
D244/D307

AUTHORS:

Nametkin, N.S., Topchiyev, A.V. and
Chernysheva, T.I.

TITLE:

The addition of hydrogen silanes to olefinic
hydrocarbons

SOURCE:

Issledovaniya v oblasti kremniyorganicheskikh
soyedineniy; sintez i fiziko-khimicheskiye
svoystva. Sbornik statey. Inst. neftekhim. sint.
An SSSR, Moscow, Izd-vo AN SSSR, 1962, 5 - 27

TEXT:

The reactions of tribromosilane, methyl- and
ethyldibromosilane and of the corresponding Cl compounds with
normal, iso-, and cyclic olefins were investigated, to discover
the relative reactivity of halogenosilicon compounds with double
bonds in olefinic hydrocarbons. It was also intended to study the
effect of the olefin structure on the yield of the reaction pro-
ducts. The reactions were initiated with ultraviolet light and
benzoyl peroxide. It was found that the bromo-compounds were

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The addition of hydrogen ...

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considerably more active than the corresponding chloro-compounds, the activity decreasing in the order: $\text{HSiBr}_3 > \text{HSiCl}_3 > \text{HSiRBr}_2 > \text{HSiRCl}_2$. In the reactions of olefins with trihalogenosilanes, the yields of alkyl-trihalogenosilanes were higher for the normal than for the iso-olefins. An increase in the molecular weight of the olefins (from 84 to 140) had little effect on the yields, but a further increase to 244 ($\text{C}_{16} \text{H}_{32}$) decreased the yields sharply. The alkyltrihalogenosilanes obtained were used for the preparation of a series of silicones by reaction with lithium or magnesium-organic compounds. It was established that tetrachlorodisilylmethane reacts with olefins to form alkyltetrachlorodisilylmethane in the first stage, and the dialkyl compound in the second stage. Platinized carbon black and chloroplatinic acid were successfully used to initiate the reaction between trialkoxysilanes and α -olefins. With chloro-platinic acid, (1N in iso-propyl alcohol), the products were obtained generally in 30 - 40 % yield with the exception of tri-(tert.butoxy)-silane which gave a 12 % yield. Decyltributoxy- and nonyltri-iso-propoxy silanes were also obtained by the interaction of decyl- and nonyl- trichlorosilanes with the corresponding alcohols.

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The two methods gave products with identical properties, which indicated that the reactions do not obey Markovnikov's rule. The combination of tribenzylsilane with α -olefins was also investigated, using chloroplatinic acid as catalyst. Tribenzylalkylsilanes were obtained in 50 - 60 % yield. The products were liquids boiling at 253° - 261°C. The similarity of physical properties of the products obtained with the aid of the catalyst and via lithium-organic compounds, indicates again that the Markovnikov's rule is not obeyed. The reaction of diethyl-, diphenyl-, methylphenyl-, dibutyl- and ditolyl silanes with α -olefins was conducted with platinized carbon black, by heating the mixtures in sealed ampoules for 20 hours at 180 - 200°C. The diethyl- and dibutyl- silanes combined with the olefins giving yields half as high (about 20 %) as those for phenyl-methyl- and diphenyl silane (40 - 65 %). There are 13 tables.

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D244/D307

AUTHORS:

Nametkin, N.S., Topchiyev, A.V. and
Chernysheva, T.I.

TITLE:

Interaction of hydrogen silanes with
unsaturated compounds containing
functional groups

SOURCE:

Issledovaniya v oblasti kremniyorgani-
cheskikh soedineniy; sintez i fiziko-
khimicheskiye svoystva. Sbornik statey.
Inst. neftekhim. sint. An SSSR, Moscow,
Izd-vo AN SSSR, 1962, 56 - 75

TEXT:

To discover whether hydrogen silanes would
react with the double bond in unsaturated compounds containing an
active hydrogen atom, various silanes were reacted with allylamine,
allyl alcohol, and tertiary unsaturated alcohols. Allylamine was
reacted with triethyl-, tripropyl-, tributyl-, dimethylphenyl-,
diethylphenyl-, methyldiphenyl-, alkyldiphenyl-, triphenyl- and
triethoxy- silanes, using chloroplatinic acid as a catalyst. The
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general reaction was: $\text{CH}_2 = \text{CH}-\text{CH}_2-\text{NH}_2 + \text{R}_3\text{SiH} \rightarrow \text{R}_3\text{Si}-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{NH}_2$.

The yields of the product were 60 - 70 % for trialkylsilanes and 30% for alkylaryl- and for the triaryl silanes. The reactions of trimethyl- and triethyl- silanes with allyl alcohol, using platinized carbon as the catalyst, gave $\text{R}_3\text{Si}-\text{O}-\text{CH}_2-\text{CH}_2 = \text{CH}_2$ with evolution of H_2 . Tributyl- and triphenyl- silanes gave in addition $\text{R}_3\text{Si}-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{OH}$. The reactions of triphenyl-, triethyl- and tributyl- silanes with unsaturated tertiary alcohols resulted in the attachment of R_3Si - groups to the multiple bonds, no formation of others being observed. The combination of R_3SiH with diallyl- oxydialkyl(phenyl)silane was carried out, using Pt catalysts. The yield of the product, resulting from the combination with the double bonds of both allyl groups, was found to be higher than that from the combination with the compound containing a single substituted allyl group. The latter was not formed at all in the combination with methylphenyl-diallyloxysilane. The former products are liquids, stable when heated in air at 400°C . Hydrolysis of the products in 10 % HCl gave organic silicon alcohols with the OH group in γ - position. There are 2 figures and 9 tables.

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DALIN, M.A.; CHERNYSHEVA, T.I.

The 12th Conference on Macromolecular Compounds. Khim.prom.
no.5:384-385 My '62. (MIRA 15:7)
(Macromolecular compounds--Congresses)

S/204/62/002/003/002/002
1032/1232

AUTHORS: Dalin, M. A. and Chernysheva, T. I.

TITLE: 12th Conference on high molecular-weight compounds, devoted to monomers

PERIODICAL: Neftekhimiya, v. 2, no. 3, 1962, 415-419

TEXT: The conference was organized by the Otdeleniye Khimicheskikh nauk AN SSSR (Department of Chemical Sciences AS USSR), Akademiya nauk Azerbaydzhanskoy SSR (Academy of Sciences, Azerbaijan SSR), Gosudarstvenny komitet Sovieta Ministrov SSSR po khimii (State Committee for Chemistry of the Council of Ministers of the USSR) and Soviet narodnogo khozyaystva Azerbaydzhanskoy SSR (National Economic Council of Azerbaijan SSR). The Conference took place in Baku on April 3-7, 1962, and was devoted to the problem of starting materials for polymerization and polycondensation. 650 representatives of 103 organizations took part, and 142 papers were heard. D. F. Kutepov, vice-president of the State Committee for Chemistry of the Council of Ministers of USSR, presented a report on "The state and the prospects of development of monomer production." R. G. Ismailov discussed the problems of development of the petrochemical and refining industry. V. A. Kargin spoke about "The expansion of the realm of monomers in connection with progress in polymerization." The report of M. A. Dalin was devoted to the development of methods of production of olefin hydrocarbons. M. F. Nagiyev reported on "Contemporary problems of the technology of petrochemical synthesis." The section of olefin compounds heard reports on production of

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olefins by pyrolysis of petroleum products presented by I. M. Artyukhov, I. S. Diner (VNII neftekhim), S. F. Vasil'yev, A. A. Lapidés, A. M. Mosin (IGI Gosekonomsovieta), A. V. Topchiyev, L. S. Polak and others (INKhS AN SSSR) reported on production of olefins by the action of ionizing radiation on raw petroleum at 300-500°C. V. V. Patrikeyev, A. A. Balandin, H. A. Butkov and others reported on investigations carried out at IOKhAN SSSR on gasification of sulfurous petroleum residues. Other topics discussed in this section included dissociation of fluid petroleum products in an electric discharge (P. S. Pechuro, A. P. Merku'yeva, G. A. Grishina, E. F. Burmistrova, M. A. Dalina), production of high purity ethylene (three contributions by A. P. Savel'yev, A. M. Borisov et al., Ye. G. Vol'nov, A. P. Litvin et al., and P. I. Markson, Ye. L. Belen'kaya and R. S. Burmistrova), determination of micro-admixtures in olefins by gas chromatography (V. G. Berezkin, L. S. Polak, M. S. Vigderganz, K. A. Gol'bert), catalytic dehydrogenation of hydrocarbons (B. A. Kazanskii, A. Z. Dorogochinskii, V. S. Aliyev, A. P. Kasimova and others), kinetics of dehydrogenation (A. P. Scheglova, O. K. Bogdanova, A. A. Balandin, IOKh AN SSSR, I. P. T'yur'yayev and I. F. Vinnik, Yaroslav, Monomer Inst.) N. M. Emanuel and E. A. Blyumberg reported on fluid phase oxidation of low molecular organic compounds for monomer production. N. G. Pol'yanskii, S. M. Markevich et al., on catalytic separation of tertiary amylenes from industrial pentane-amylene fractions. N. I. Shuikin, Ye. A. Timofeyeva, Yu. N. Plotnikov, T. P. Dobrynina, G. S. Petryayeva (IOKh AN SSSR) reported on catalytic dehydrogenation

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of methylpentanes and of 2,3-dimethylbutane. Methods of synthesis of vinyl-cyclo-hexane were discussed by Ya. M. Paushkin and by A. V. Topchiyev, S. D. Mekhtiyev. The section of metal-organic chemistry heard a review report on "Phosphor organic monomers" presented by M. I. Kabachnik, Ye. L. Gefter, P. A. Moshkin and T. Ya. Medved'. M. I. Kabachnik, P. A. Moshkin, S. L. Varshavsky, L. P. Kofman, Ye. L. Gefter, G. V. Tkachenko, A. A. Danilevich reported on an industrial method of synthesis of di- β , β -chlor-ethyl of vinyl-phosphinic acid from ethylene oxide and phosphorus trichloride. A series of reports on the synthesis of various phosphorus-containing monomers was presented by the Kazan school of chemists (A. N. Pudovik, Ye. V. Kuznetsov, B. F. Malichenko, O. P. Grishina, etc.). On the synthesis of phosphorus-containing dicarbonic acids reported V. V. Korshak, T. M. Frunze and V. V. Kurashev. Ye. F. Bucherenko (IOKh AN SSSR) reported on the possibility of synthesis of phosphorus-silicon hydrides starting from unsaturated phosphorus containing compounds and silicon hydrides. Reports on silicon-organic compound with alternating siloxane and carbon elements were presented by A. M. Polyakova, M. D. Suchkova and V. M. Vdovin (INEOS AN SSSR) and by N. S. Nametkin and N. A. Printula. (INKhS AN SSSR). Telamerization of silicon-organic cycles was discussed by K. A. Andriyanov and V. V. Severny (INEOS AN SSSR). A simple method for the synthesis of aryl-fluor-silicon-hydrides was proposed by Ye. A. Chernysheva and M. Ye. Dolgaya (IOKH AN SSSR). V. F. Mironov and H. N. G. Dzhurinskii reported on a new preparative method for the synthesis

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of germanium-containing monomers. The synthesis of metacrylates and acrylates containing aluminum, boron, germanium was discussed by G. S. Kolesnikova, S. L. Davydova and N. V. Klimentova (INEOS AN SSSR) The only report on the use of hydrogen-containing silicon organic monomers, the manufacture of which is nonexistent, was made by A. Morozov (Goskhimkomitet). The section of starting materials for polycondensation heard reports on monomer production for the synthesis of polyamides and polyethers, polycarbonates and D epoxide resins. Production of maleic anhydride by oxidation of butylenes was discussed by B. L. Mal'davskii. Reports from the Institute of Organic Chemistry, A. S. Latvian SSR discussed the possibility of production of maleic anhydride and maleic dialdehyde from furfural. Experimental data about production of phthalic anhydride by oxidation of o-xylol were given in reports by A. F. Kamneva and L. A. Muzychenko, and by Kh. Ye. Khcheyan, A. F. Pavlichev., S. M. Arbitman, B. K. Krupstov. Several communications dealt with methods for production of terephthalic acid. Production of hydroquinone and resorcinol by oxidation of *p*- or *m*-diisopropylbenzenes with air oxygen was discussed by V. V. Fedorov, M. S. Belen'kaya, et. al P.A. Moshkin, N. I. Kutsenko, L. K. Filippenko proposed a method for production of dicarboxylic acids with ten carbon atoms in the chain, using vinyl as starting material. Reports from INEOS and INKhS AN SSSR dealt with a new monomer for the production of the synthetic fiber dode-Kalaktan (L. I. Zakharkin, V. V. Korneva, G. M. Kunitstseraya, A. N. Bashkirova, V. V. Kamzolkin, K. M. Sokova). Data on the synthesis of perchloro-

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S/204/62/002/003/002/002
1032/1232

alkenes, perchloro-alkendienes and perchlorocyclodienes were given by Yu. G. Mamedaliyev and M. M. Guseinov (INKhP AN AzSSR). Ye. G. Denisov, V. V. Kharitonova (IKhF AN SSSR) discussed the mechanism of oxidation of cyclohexanol to cyclohexanone. The section of vinyl compounds heard the survey report by M. F. Shostakovskii on "The state and prospects of development of the monomer chemistry on the base of vinyl compounds". The conference heard reports on the synthesis of new monomers from acetylene and derivatives of acrylic acids, vinyl ethers of the aromatic series, vinyl ethers of penta-erythrite (IOKh and Irkutsk IOKh AN SSSR), vinyl-carboxylic acids (IVS AN SSSR), vinyl substituted cyclic hydrocarbons (INKhP AN SSSR), vinyl substituted cyclic hydrocarbons (INKhPAN AzSSR), etc. Direct synthesis of acrylonitrile on the basis of propylene was reported (Baku Experimental Factory, Inst. im. Karpov and Inst. of Chem. Science of KazSSR). Reports dealing with production of vinyl chloride from dichloro-ethane and acetylene, synthesis of allyl-vinyl ethers, vinyl substituted cyclohexane hydrocarbons (INKhP AzSSR), methods of purification of vinyl chloride, synthesis of unsaturated oxides, unsaturated nitro-compounds, etc., were also heard. The concluding plenary session heard a report by N. N. Semenov. ✓

Card 5/5

CHERNYSHEVA, T. I.

L321

S/844/62/000/000/081/129
D423/D307

5.3700
AUTHORS: Topchiyev, A. V., Lyashenko, I. M., Mametkin, N. S., Polak, L. S., Teterina, M. P., Fel'dman, A. S. and Chernysheva, T. I.

TITLE: Radiation polymerization of allyl silanes

SOURCE: Trudy II Vsesoyuznogo soveshchaniy po radiatsionnoy khimii. Ed. by L. S. Polak. Moscow, Izd-vo AN SSSR, 1962, 477-483

TEXT: A study was made of the radiation polymerization of organo-silicon compounds in order to explain the mechanism of the process. Mono-, di- and triallyl silanes were subjected to γ radiation from Co^{60} at an intensity of 3.4×10^6 ev/cm².sec at 100°C. A similar series of tests was carried out using benzoyl peroxide as inhibitor. Reactivity of the monomers increased with increasing number of the allyl groups. Ir spectra of polydiallylethylsilanes showed that the Si-H bond was preserved and that polymerization occurred only at the expense of the double bond of the allyl group, in contrast to

Card 1/2

Radiation polymerization of ...

S/844/62/000/000/081/129
1425/D307

polymerization of diallyl silane in the presence of platinized carbon, where new Si-C bonds were formed. The radical mechanism of the process was confirmed. Solid, insoluble copolymers with acrylonitrile were obtained, which did not melt below 300°C. The molar ratio of the organosilicon component of the copolymer to the acrylonitrile component increased with its increase in the initial mixture, the dependence being stronger at lower dosages. Examination of the IR spectra showed differences in structure between the copolymers of acrylonitrile with diallylethyl silane and ethylphenyl silane. Copolymerization with styrene was studied, finding that the yields of copolymer increased with dosage up to a constant maximum of 50 - 60% for a dose of 28 - 42 x 10²⁰ ev. The dependence of yield, composition and molecular weight on the composition of the initial mixture was also studied. It was concluded that polymerization proceeded by a radical mechanism. There are 8 figures and 1 table.

ASSOCIATION: Institut neftekhimicheskogo sinteza AN SSSR (Institute of Petrochemical Synthesis, AS USSR)

Card 2/2

DALIN, M.A.; CHERNYSHEVA, T.I.

Twelfth Conference of Macromolecular Compounds devoted to
monomers. Neftekhimiia 2 no.3:415-419 My-Je '62. (MIRA 15:8)
(Macromolecular compounds--Congresses)

NAMETKIN, N. S.; PRITULA, N. A.; TOPCHIEV, A. V.; CHERNYSHEVA, T. I.

Synthesis of organosilicon compounds having phenylene-carbon
links. Neftekhimia 2 no.4:632-638 J1-Ag '62.
(MIRA 15:10)

1. Institut neftekhimicheskogo sinteza AN SSSR.

(Silicon organic compounds)

CHERNYSHEVA, T. I.; NAMETKIN, N. S.; PRITULS, N. A.; KARTASHEVA, L. I.;

"Silicon-organic compounds with phenylene-carbon and thienyl-carbon chain links."

Institute for petrochemical syntheses of the Academy of Science of the USSR,
Moscow.

Second Dresden Conference on Organic and Non-Silicate Chemistry, 26-30 March 1963,
East Germany

L 17099-63

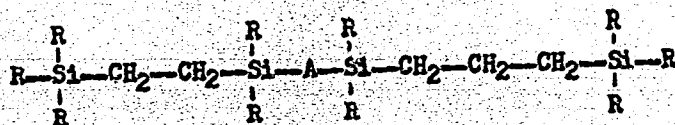
EMP(j)/EPF(c)/ENT(m)/BDS ASD Pc-4/Pr-4 RM/WW/MAY
S/062/63/000/004/010/022

AUTHOR: Nametkin, N.S., Topchiyev, A. V., Chernysheva, T.I., and
Kartasheva, L.I. 68
67

TITLE: Some organosilicon compounds containing siloxano-carbon, silthiano-
carbon and silazano-carbon chains

PERIODICAL: Akademiya nauk SSSR, Izvestiya. Otdeleniye khimicheskikh nauk,
no. 4, 1963, 654-659

TEXT: A description is given of the synthesis of compounds having the
following general formula



Card 1/2

L 17C99-63

S/062/63/000/004/010/022

Some organosilicon compounds containing

where A = C; NH; S. These compounds were obtained from pentaalkyl (aryl)-chlorodisilylpropanes which in turn were obtained by the addition of various hydridesilanes to allylsilanes, in the presence of chloroplatinic acid. A total of 15 compounds was synthesized. Physical and chemical properties of the compounds are presented in 4 tables.

ASSOCIATION: Institut neftekhimicheskogo sinteza Akademii nauk SSSR (Institute of Petrochemical Synthesis, Academy of Sciences USSR)

SUBMITTED: June 4, 1962

Card 2/2

CHERNYSHEVA, T. I.

L 18755-63

WW/MAY

EWP(j)/EPF(c)/EWT(m)/BDS ASD/ESD-3 Pc-4/Pr-4 RM/

0004/63/010/007/0390/0391

(5)

75

73

ACCESSION NR: AP3005759

AUTHOR: *CH* *SKUM* *PRITULA* *KARTASCHewa*
Tschernyschewa, T. I.; Nametkin, N. S.; Pritula, N. A.; Kartaschewa, L. I.

TITLE: Organic silicon compounds with phenylene and thienylene chain links.
(Paper presented at the II. Dresden Symposium for Organic and Non-Silicate
Silicon Chemistry held from 26 to 30 March 1963. Translated from the Russian
by E. Hassenruck and J. A. Kohler, Leipzig)

SOURCE: Plaste und kautschuk, v. 10, no. 7, 1963, 390-391

TOPIC TAGS: polymer, organic silicon compound, phenylene, thienylene, silane

ABSTRACT: The following compounds were prepared: see Fig. 1 of Enclosure 1.
Alkenylsilanes were added to the H-Si-bonds. The synthesis of the dihydridpheny-
lenesilanes resulted from the Mg compounds of the p-dibrombenzene and alkylaryl-
hydrochlorsilanes; see Fig. 2 of Enclosure 1. The bromphenyldialkyl (aryl)
silanes as well as the bromthienylalkyl (aryl) silanes were used to prepare
p-phenylenevinylhydrosilanes and 2,5-vinylhydrothienylsilanes. Addition of the
vinyltrialkylsilanes to both Si-H-bonds of the dihydrophenylenesilanes gave

Cord 1/4

L 18755-63

ACCESSION NR: AP3005759

2

yields of 35 to 70%. The properties of the addition products obtained are shown in Table 1 of Enclosure 2. These addition took place in all cases at the last carbon atom. An investigation of the polymerization of p-phenylenehydrovinylsilanes and thienylenehydrovinylsilanes has been initiated by the authors. Orig. art. has: 1 table.

ASSOCIATION: Institut für Petrochemische Synthese der Akademie der Wissenschaften der UdSSR, Moscow (Institute for Petrochemical Synthesis of the Academy of Sciences of the USSR, Moscow)

SUBMITTED: 00

DATE ACQ: 14 Aug 63

ENCL: 02

SUB CODE: CH

NO REF SOV: 000

OTHER: 000

Card 2/4

1 22663-65 EPF(c)/EWP(j)/EWT(m)/T PC-4/PT-4 RM/MLK
 ACCESSION NR: AT5002118 S/0000/64/000/000/0097/0102

AUTHOR: Namedin, N. S. (Corresponding member AN SSSR); Pritula, N. A.;
Chernysheva, T. I.

TITLE: Organosilicon compounds with phenylene rings

SOURCE: AN SSSR. Institut neftekhimicheskogo sinteza. Sintez i svoystva monomerov
 (The synthesis and properties of monomers). Moscow, Izd-vo Nauka, 1964. 97-102

TOPIC TAGS: silicoorganic compound, phenylene ring, silane derivative, silicoorganic
 polymer, silicoolefin

ABSTRACT: The organo-magnesium method based on p-dibromobenzene was used to pre-
 pare the following monomers with two atoms of silicon in the molecule, separated by a
 phenylene bridge: dihydro- and hydrovinyl-p-phenylenedisilanes. A study was also made
 of the addition of dihydro-p-phenylenedisilanes to alkenylsilanes. Some of the addition
 products were, in turn, monomers capable of further chemical conversions. The dihydro-
 p-phenylenedisilanes react with acetylene in the presence of platinum catalysts to form
 polymers with silicon-phenylene-silicon-carbon chains. The hydrovinyl-p-phenylenedisil-
 lanes are capable of polymerization. Orig. art. has: 1 table and 13 formulas.

Card 1/2

L 22663-65

ACCESSION NR: AT6002116

ASSOCIATION: None

SUBMITTED: 30Jun64

ENCL: 00

SUB CODE: OC, GC

NO REF SOV: 003

OTHER: 005

Cord 2/2

L 32214-65 ENT(m)/EPF(c)/EMP(j) Pc-1/Pr-4 RM/OS

ACCESSION NO: AT5012122

S/0000/84/000/000/0135/0139

AUTHOR: Chernysheva, T.I.; Narnetkin, N.S. (Corresponding member AN SSSR); 22-
Grinberg, F. L. 13-1

TITLE: A study of the addition of hydrosilanes to allyl esters

SOURCE: AN SSSR, Institut neftekhimicheskogo sinteza. Sintez i svoystva monomerov
(The synthesis and properties of monomers). Moscow. Izd-vo Nauka, 1964, 135-139

TOPIC TAGS: silicorganic compound, heteroorganic compound, hydrosilane, allyl ester,
addition reaction

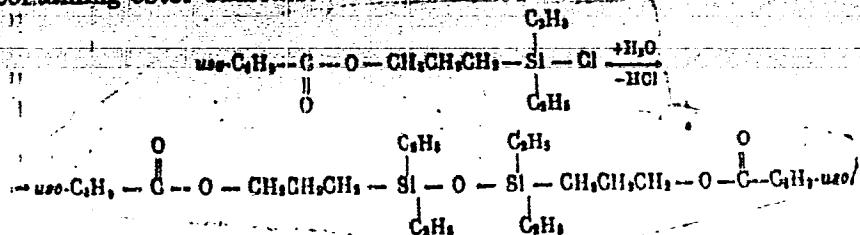
ABSTRACT: Twentyfour addition products (mol. wt. 257-499, boil. pt. 117-240C, solidification pt. -29.5 - -93C, yield 19-82%) were prepared by reacting a double excess of ethyldichloro-, diethylchloro-, triethyl-, ethyldiphenyl-, diethylphenyl-, and triethylsilane with the allyl esters of valeric and isovaleric acids and the diallyl ester of sebacic acid in the presence of 0.1 N H₂PO₄ in a sealed tube at atmospheric pressure; the process took 5-6-hours at temperatures gradually raised to 190-220C. The hydrosilanes were found to add to the allyl esters at the double bond of the allyl radical, and either one or both allyl radicals of the diallyl ester of sebacic acid, in a process contrary to Markovnikov's rule. A 1.5-hour hydrolysis at 80C of the diethylchlorosilylpropyl ester of isovaleric acid at 80C was performed to obtain a

Card 1/2

I 32214-65

ACCESSION NR: AT5002122

disiloxane containing ester radicals:



Thirteen of the prepared products had not previously been described in the literature.
Orig. art. has: 2 tables and 7 formulas.

ASSOCIATION: none

SUBMITTED: 30Jul64

ENCL: 00

SUB CODE: OC

NO REF SOV: 000

OTHER: 000

Card 2/2

22440-65 ENG(j)/EWT(m)/EPP(e)/EPP(n)-2/EWP(j)/T/EWA(h)/EWA(l) Po-4/Pr-4/
Pu-4/Pe-4 GG/RM
ACCESSION NR: AP5000485 S/0062/84/000/011/2072/2072

AUTHOR: Gusel'nikov, L. Ye.; Nametkin, N. S.; Polak, L. S.; Cherny'sheva,

T. I.

TITLE: Radiation polymerization of triallylsilanes

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 11, 1964, 2072

TOPIC TAGS: radiation polymerization¹⁹, triallylsilane, cyclopolymerization, methyltriallylsilane monomer, phenyltriallylsilane monomer, residual unsaturation

ABSTRACT: This article deals with the cyclopolymerization of methyltriallylsilane and phenyltriallylsilane monomers in a 10% benzene solution subjected to gamma irradiation with a dose rate of 1.5×10^6 r/hour and at 30 C. Both silanes formed white powders which are easily soluble in various solvents and melt at 60-100C. Yield was 86 and 64% respectively. Comparison of the optical density of double-bond valence vibrations in monomer and polymer showed a 13-20% residual unsaturation. It is assumed that the cyclopolymerization reaction proceeds with formation of mono and bicyclic links in the main polymer backbone.

Cord 1/2

L 22440-65

ACCESSION NR: AP5000485

Orig. art. has: 1 formula

ASSOCIATION: Institut neftekhimicheskogo sinteza im. A. V. Topchieva
Akademii nauk SSSR (Institute of Petrochemical Synthesis, Academy of Sciences
SSSR)

SUBMITTED: 12Mar64

ENCL: 00

SUB CODE: GC, OC

NR REF SOV : 002

OTHER: 001

Card 2/2

L 25272-65 EWT(m)/EPF(c)/EPR/EWP(j)/IWA(c) PC-4/Pr-4/PS-4 RPL WH/JH/RM

ACCESSION NR: AP5001603

S/0062/64/000/012/2230/2232

AUTHOR: Borisov, S. N.; Vinogradova, V. V.; Lyashenko, I. N.; Nametkin, N. S.
Chernysheva, T. I.

TITLE: Addition of cyclic siloxanes, containing Si-H bonds, to unsaturated compounds

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 12, 1964, 2230-2232

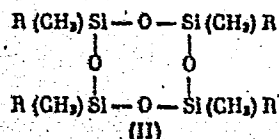
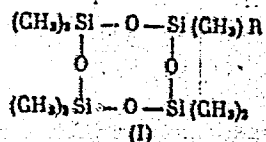
TOPIC TAGS: cyclic siloxane addition product, cyclic siloxane unsaturate adduct, synthesis

ABSTRACT: Four new addition products of Si-H bond containing cyclic siloxanes to unsaturated compounds were synthesized. The addition of heptamethylcyclotetrasiloxane (I) to α -methylstyrene, nonene-1, methylmethacrylate and allylamine, and of sym. tetramethylcyclotetrasiloxane (II) to methylmethacrylate was effected by heating the reactants in the presence of 10% chloroplatinic acid. Regardless of the nature of the unsaturated compound the cyclic structure was preserved; and IR and NMR spectral data confirmed the following structures:

Card 1/2

L. 25272-65

ACCESSION NR: AP5001603



Orig. art. has: 1 table and 2 formulas

ASSOCIATION: Institut neftekhimicheskogo sinteza im. A. V. Topchiyeva
Akademii nauk SSSR (Institute of Petrochemical Synthesis Academy of Sciences
SSSR) Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka
(All-Union Scientific Research Institute of Synthetic Rubber)

SUBMITTED: 06May64

ENCL: 00

SUB CODE: GC, CC

NR REF SOV: 003

OTHER: 000

Card 2/2

ACCESSION NR: AP4040604

1-bromo-4-(dialkyl)- or 1-bromo-4-(diarylsilyl)-benzene and 2) reaction of the Grignard reagent from the latter with the appropriate alkyl- or aryl-chlorovinylsilane to form I or II in 28.4 and 35.0% yields, respectively. Polymerization of II (taken as an example) at 300C in the presence of Pt on C or at 280C without a catalyst formed straight-chain soluble polymers with $-\text{SiC}_6\text{H}_4\text{SiCH}_2\text{CH}-$ repeat units in the backbone in 82.3 and 68.4% yield and softening at 142—150C and 87—93C, respectively. The structure of the polymers was confirmed by IR spectroscopy. This work was done at the Institute of Petrochemical Synthesis, Academy of Sciences SSSR. Orig. art. has: 8 formulas, 2 tables, and 3 figures.

ASSOCIATION: Institut neftekhimicheskogo sinteza AN SSSR im. A. V. Topchiyeva (Institute of Petrochemical Synthesis, AN SSSR)

SUBMITTED: 10Sep63

DATE ACQ: 06Jul64

ENCL: 100

SUB CODE: OC,GC

NO REF SOV: 006

OTHER: 007

Card 2/2

1 11298-65

EPA(s)-2/ENT(m)/EPF(c)/EEI/TWP(j)/T Po-1/Pr-1/Pa-1/Pa-10

DJ/RH

ACCESSION NR: AP4044556

8/0204/64/004/004/0630/0637

AUTHOR: Nanetkin, N. S.; Chernyshova, T. I.; Pritula, N. A.;
Oppengeym, V. D.; Nechitaylo, N. A.

TITLE: Synthesis of organosilicon compounds with phenylenecarbon and phenylenesiloxane groups and their thermoanalysis

SOURCE: Neftekhimiya, v. 4, no. 4, 1964, 650-657

TOPIC TAGS: silphenylene, p bis(methyphenylsilyl)benzene, silphenylene structure, silphenylene thermal transformation, silphenylene synthesis

ABSTRACT: A number of silphenylenes of the type



where A is O or (CH₂)_n with n = 1, 2, 3, R and R' are CH₃, or A is (CH₂)_n and R' is C₆H₅, have been prepared from p-bis(methylphenylsilyl)benzenes in which silicon atoms are linked with bromine, vinyl

Card-

1/3

L 11298-65

ACCESSION NR: AP4044556

radicals or hydrogen atoms. The study was conducted because silpheny-
lenes were expected to exhibit high thermal stability, and because of
their possible use as lubricants, heat-transfer agents, and fluids for
vacuum diffusion pumps. The structure of the compounds was confirmed
by IR spectral analysis. The thermal conversions of the silpheny-
lenes were studied in air with the Kurkakov pyrometer equipped with
automatic recording. The results of derivative thermogravimetric
analysis are given in Table 1 of the Enclosure. Orig. art. has:
5 figures and 1 table.

ASSOCIATION: Institut neftekhimicheskogo sinteza im. A. V. Topchiyeva
AN SSSR (Institute of Petrochemical Synthesis, AN SSSR)

SUBMITTED: 09Dec63

ATD PRESS: 3104

ENCL: 01

SUB CODE: GC, OC

NO REF SOV: 004

OTHER: 007

Card
2/3

L 11298-65

ACCESSION NR: AP4044556

ENCLOSURE: 01

Table 1. Conversions of silphenylenes from data of derivative thermogravimetric analysis

Compound	Temperature, °C			
	Melting	First Exo- thermic effect	Second Exo- thermic effect	Endo- thermic effect
$(\text{CH}_3)_3\text{Si} - (\text{CH}_2)_3 - \text{Si}(\text{CH}_3)_3$	—	280—360	445—595	—
$(\text{CH}_3)_3\text{Si} - (\text{CH}_2)_3 - \text{Si}(\text{CH}_3)_3$	62	218—337	452—530	—
$(\text{CH}_3)_3\text{Si} - (\text{CH}_2)_3 - \text{Si}(\text{CH}_3)_3$	60	205—335	452—550	—
$(\text{CH}_3)_3\text{Si} - \text{C}_6\text{H}_5 - \text{Si}(\text{CH}_3)_3$	—	240—375	540—600	—
$(\text{CH}_3)_3\text{Si} - \text{O} - \text{Si}(\text{CH}_3)_3$	—	—	—	365—415

Card 3/3

L 16027-65 EWG(j)/EWT(m)/EPF(e)/EPF(n)-2/EWP(j)/T/EWA(h)/EWA(l) Ps-h/Pr-h/Peb/
 ACCESSION NR: AP4049152 Pu-h/ ASD(m)-3/AFETR S/0190/64/006/011/2002/2007
 GG/RM

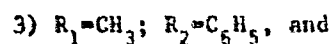
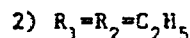
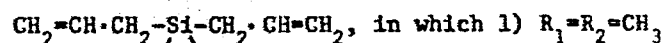
AUTHOR: Gusev'nikov, L. Ye.; Nametkin, N. S.; Polak, L. S.; Cherny'sheva, T. I.

TITLE: Polymerization of diallylsilanes under the action of γ -radiation

SOURCE: Vy'sokomolekulyarnyye soyedineniya, v. 6, no. 11, 1964, 2002-2007

TOPIC TAGS: organosilicon compound, diallyl silane, allylsilane, polymerization, ionized radiation, ionized radiation induced polymerization, gamma radiation

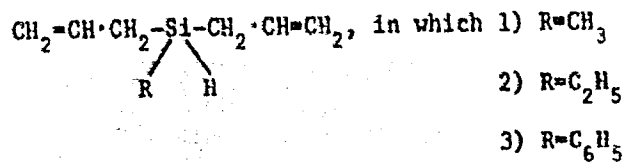
ABSTRACT: The mechanism of γ -ray-induced polymerization of diallylsilanes has been investigated. Monomers of the following general compositions were used:



Cord 1/3

L 16027-65

ACCESSION NR: AP4049152

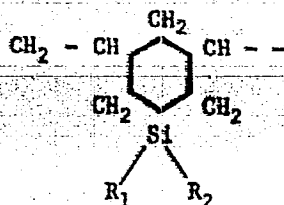


Polymerization was carried out in benzene, in glass ampoules, in the absence of oxygen. Co^{60} was used as the γ -radiation source, having a rate of $1.5 \cdot 10^6$ r/hr at 30C. Light, soluble, and fusible powders with 50—110C melting points were obtained. The basic composition of the polymers obtained was that of the monomers. The IR spectra and the low unsaturation of the polymers indicate that polymerization occurs according to the intermolecular-intramolecular mechanism, which produces the following six-membered organosilicon ring:

Cord 2/3

L 16027-55

ACCESSION NR: AP4949152



Orig. art. has: 3 figures and 1 table.

ASSOCIATION: Institut neftekhimicheskogo sinteza AN SSSR (Institute of Petrochemical Synthesis, AN SSSR)

SUBMITTED: 20Jan64

ENCL: 00

SUB CODE: GC, NP

NO REF SOV: 005

OTHER: 005

ATD PRESS: 3141

Card 3/3

L 6647-65 EWT(m)/EPF(c)/EWP(j) Pc-4/Pr-4 ASD(m)-3/AS(mp)-2/ASD(a)-5/
ESD(gs)/ESD(t) RM
ACCESSION NR: AP4042747 S/0079/64/034/007/2258/2262

AUTHOR: Mametkin, N. S., Chernysheva, T. I., Babare, L. V. 63

TITLE: Synthesis of organosilicone derivatives of ferrocene, containing the Si-H bond

SOURCE: Zhurnal obshchey khimii, v. 34, no. 7, 1964, 2258-2262

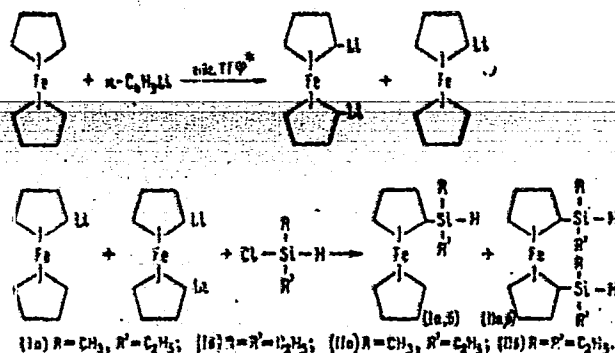
TOPIC TAGS: organosilicons, ferrocene, dialkylsilyl ferrocene, Si H bond, Si H bond reactivity, addition reaction, hexene, methylethylsilyl ferrocene addition reaction, platinum catalyst, infrared spectrum, triethylsilyl ferrocene

ABSTRACT: Dialkylsilyl ferrocenes were obtained by the interaction of methylethyl-diethylchloro silane with lithium ferrocene in a tetrahydrofuran medium according to the following reaction:

Card 1/3

L 6647-65

ACCESSION NR: AP404747



The reaction proceeded with the formation of both mono- as well as disubstituted dialkylsilyl ferrocenes. Yield and properties are tabulated. The reaction products were stable fatty fluids; I. R. spectra showed an intensive absorption band in the 2100 cm^{-1} range indicative of the Si-H bond. Homoannular dialkylsilyl ferrocenes also showed absorption in the 1000 and 1100 cm^{-1} range. The reactivity of the Si-H bond was tested by attempting a synthesis of triethylsilyl ferrocene

Cont 2/3

ACCESSION NR: AP4042747

from lithium ferrocene and $\text{HSi}(\text{C}_2\text{H}_5)_3$. The reaction proceeded unsatisfactorily, with poor yield. However, an addition reaction of methylthylsilyl ferrocene with hexene-1 under atmospheric pressure and the use of a platinum catalyst was successful, resulting in a 63% yield. The procedures and reaction products are described. Orig. art. has: 7 formulas and 1 table.

ASSOCIATION: None

SUBMITTED: 21May63

ENCL: 00

SUB CODES: OC, GC

NO REF BOV: 001

OTHER: 005

Card 3/3

NAMETKIN, N.S.; CHERNYSHEVA, T.I.; PRUTULA, N.A.; GEVRYAR, M.F.

Bromo- and acetoxy derivatives of dihydrideparaphenylenedisilanes.
Dokl. AN SSSR 195 no. 5:1126-1129 Ap '64. (MIRA 17:5)

1. Institut neftekhimicheskogo sinteza AN SSSR. 2. Chlen-korrespondent AN SSSR (for Nametkin).

ACCESSION NR: AP4038524

S/0020/64/156/003/0608/0611

AUTHOR: Nametkin, N. S. (Corresponding member); Cherny*sheva, T. I.; Kartasheva, L. I.

TITLE: Organosilicon compounds with thienylene and hydrocarbon links

SOURCE: AN SSSR. Doklady*, v. 156, no. 3, 1964, 608-611

TOPIC TAGS: silane, thiophene, thiophene derivative, silane derivative

ABSTRACT: The study of the addition of silanes to unsaturated compounds has been continued and organosilicon compounds containing thienylene and hydrocarbon links in the backbone have been synthesized. This work was done at the Institute of Petrochemical Synthesis imeni A. V. Topchiyev, Academy of Sciences SSSR. 2,5-Bis(methylphenylsilyl)- (I; b₂, 200—205C) and 2,5-bis(ethylphenylsilyl)-thiophene (II; b₂, 228—230C) were synthesized by reacting 2,5-thiophenedimagnesium dibromide with the appropriate

Card 1/2

ACCESSION NR: AP4038524

alkylphenylchlorosilane in yields of 33.0—55.6%, respectively. From I or II and the appropriate trialkylalkenylsilane (1/3 molar ratio) in the presence of chloroplatinic acid catalyst at atmospheric pressure and 70—200C, the following thick oils were synthesized in 50.3—77% yields: 2,5-bis[(trimethyl- and 2,5-bis[(triethylsilylethyl)methylphenylsilyl]thiophene; 2,5-bis[(trimethylsilylpropyl)methyl- and 2,5-bis[(trimethylsilylpropyl)ethyl-phenylsilyl]thiophene; and 2,5-bis[(triethylsilylpropyl)phenylethyl]thiophene (b_2 , 258—260, 307—310, 277—280, 280—285, and 325—330C, respectively). Structures were confirmed by IR spectroscopy. Orig. art. has: 2 tables and 3 formulas.

ASSOCIATION: Institut neftekhimicheskogo sinteza im. A. V. Topchiyeva Akademii nauk SSSR (Institute of Petrochemical Synthesis, Academy of Sciences SSSR)

SUBMITTED: 04Jan64

DATE ACQ: 09Jun64

ENCL: 00

SUB CODE: OC

NO REF SOV: 001

OTHER: 000

Card 2/2

L 34857-65 EWG(j)/EWT(m)/EPF(c)/EWP(j)/T/EWA(h)/EWA(1) Pc-4/Pr-4/Peb RM
 ACCESSION NR: AP5007200

S/0286/65/000/003/0064/0064

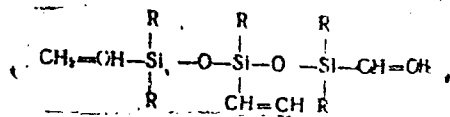
AUTHOR: Gusel'nikov, L. Ye.; Nametkin, N. S.; Polak, L. S.; Chernysheva, T. I.

TITLE: Polymerization method for organosilicon compounds. Class 39, No. 168023

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 3, 1965, 64 .

TOPIC TAGS: organosilicon compound, siloxane, polysiloxane trivinyltrisiloxane, polymer, soluble polymer

ABSTRACT: An Author Certificate has been issued for a polymerization method for organosilicon compounds. This method involves irradiation of the silicon-containing monomer with ionizing radiation, e.g., gamma radiation from a Co^{60} source. In order to obtain a soluble polymer, trivinyltrisiloxane monomers are used which have the general formula:



Card 1/2

L 34857-65

ACCESSION NR: AP5007200

In order to raise the soluble polymer yield, the monomer is irradiated in a solvent such as benzene at 0—100°, (0.2—1.0) 10^8 r, and 10^2 — 10^3 r/sec. Orig. art. has:
1 formula. [SM]

ASSOCIATION: Institut neftekhimicheskogo sinteza AN SSSR (Institute of Petrochemical
Synthesis, AN SSSR)

SUBMITTED: 28Aug63

ENCL: 00

SUB CODE: 00, 00

NO REF SOV: 000

OTHER: 000

ATD PRESS: 3211

Card 2/2

L 64555-65 EWT(m)/EPF(c)/IWP(j)/T RM

ACCESSION NR: AP5020969

UR/0190/65/007/008/1400/1405

542.64+66.095.26+678.84

AUTHOR: Gusel'nikov, L. Ye.; Yegorov, Yu. P.; Nametkin, N. S.; Polak, L. S.

Chernysheva, T. I.

TITLE: Synthesis and polymerization of certain polyfunctional vinylsiloxanes

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 8, 1965, 1400-1405

TOPIC TAGS: vinylsiloxanes, polymerization, cyclopolymerization, organic synthetic process

ABSTRACT: The possibility of obtaining linear high molecular weight polymers by polymerizing polyfunctional vinylsiloxanes was investigated. Tetra- and hexa-functional monomers were synthesized by hydrolysis of the appropriate vinyl-chlor(ethoxy)silane and cohydrolysis of mono- and di-functional vinyl-ethoxysilanes. 1,3-Divinyl-1,1,3,3-tetramethyldisiloxane, 1,3-divinyl-1,3-dimethyl-1,3-diphenyldisiloxane and 1,3,5-trivinyl-1,1,3,5,5-pentamethyltrisiloxane were synthesized and then subjected to polymerization initiated by γ -irradiation or by tertiary butyl peroxide. The polymers produced by either method were essentially the same. Soluble high molecular weight polymers were produced, but the

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L 64555-65

ACCESSION NR: AP5020969

polymerization yield was reduced as functionality of the monomer increased.
IR spectra of the monomers and polymers and the decrease in residual unsaturation led to the conclusion that cyclopolymerization took place in addition to polymerization at one vinyl group of the monomer. Orig. art. has: 3 figures, 1 table, and 2 equations

ASSOCIATION: Institut neftekhimicheskogo sinteza AN SSSR (Institute of Petrochemical Synthesis, AN SSSR)

SUBMITTED: 17Sep64

ENCL: 00

SUB CODE: OC, GC

NR REF SOV: 004

OTHER: 013

for
Card 2/2

METEL'SKIY, Z.I., kand. tekhn. nauk; MISHANIN, Ye.P.; CHERNYSHEVA, T.I.

Review of foreign patents on problems of the mechanization of the movement of sprinkling and irrigating units. Gidr. i mel. 17 no.6: 55-62 Je '65. (MIRA 18:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidrotekhniki i melioratsii im. A.N.Kostyakova.

L 01305-67 EWT(m)/EWP(j)/T IJP(c) RM

ACC NR: AP5027229

(A)

SOURCE CODE: UR/0020/65/164/006/1319/1322

AUTHOR: Nametkin, N. S. (Corresponding member AN SSSR); Pritula, N. A.; Chernyshova, T. I.; Znamenskaya, E. N.

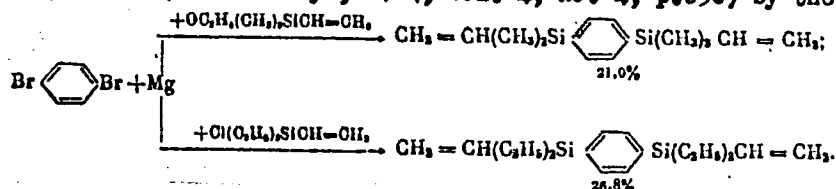
ORG: Institute of Petrochemical Synthesis im. A. V. Topchiyev, AN SSSR (Institut neftekhimicheskogo sinteza AN SSSR)

TITLE: Synthesis of 1,4-bis(diorganovinylsilyl)benzenes 1

SOURCE: AN SSSR. Doklady, v. 164, no. 6, 1965, 1319-1322

TOPIC TAGS: organosilicon compound, benzene, organic synthetic process

ABSTRACT: The newest achievements of the authors in the study of organosilicon compounds with a phenylene bridge between the silicon atoms are reported. A new group of p-disilyl substituted benzenes, the symmetrical 1,4-bis(diorganovinylsilyl)-benzenes, were prepared analogously to the method given by N. S. Nametkin, T. I. Chernysheva, et al. (Neftekhimiya, 1964, vol. 4, no. 4, p.650) by the scheme:

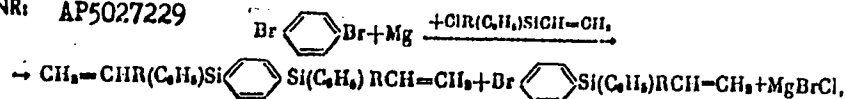


Card 1/2

UDC: 546.287

L 01305-67

ACC NR: AP5027229



The reaction was performed in tetrahydrofuran (THF) with the molar ratio of components 1,4-B₂C₆H₄:Mg:XRR'SiCH₂CH₂ equal 1:~2.3:2. The physicochemical constants of the mono- and n-disilyl substituted benzenes are given in Table 1. The products obtained reacted with substituted silicon hydrides to give high-molecular-weight polymers. Orig. art. has: 1 fig. and 1 table.

Table 1. Physicochemical constants of mono- and n-disilyl substituted benzenes

Compound	boiling pt. °C/mm	d ₄ ²⁰	n _D ²⁰	MRD		mol. wt.		
				detd.	cal.	detd.	cal.	
CH ₂ =CH(CH ₂) ₂ Si(C ₆ H ₅) ₂ CH=CH ₂	95/1	0.9123	1.5120	81.08	81.85	243 244	245.4	detd.-deter- mined
CH ₂ =CH(CH ₂) ₂ Si(C ₆ H ₅) ₂ CH=CH ₂	136-137/1	0.9268	1.5218	99.54	99.89	301 300	303.3	
[CH ₂ =CH(CH ₂) ₂ Si(C ₆ H ₅) ₂] _n	191-192/8-10- 83	1.0248	1.5802	121.91	121.49	367 371	370.6	cal.-calculat- ed
CH ₂ =CH(CH ₂) ₂ Si(C ₆ H ₅) ₂ CH=CH ₂	157-158	—	—	—	—	504 507	494.7	
Br-C ₆ H ₄ -Si(CH ₃) ₂ (C ₆ H ₅) ₂ CH=CH ₂	143-144/1	1.2387	1.5617	81.99	81.61	299 305	303.3	
Br-C ₆ H ₄ -Si(CH ₃) ₂ CH=CH ₂	203-204/1 80-81	—	—	—	—	360 361	363.3	

Card 2/2

SUB CODE: 07/ SUBM DATE: 07May65/ ORIG REF: 007/ OTH REF: 008

L 64555-65 EWT(m)/EPF(o)/EWP(j)/T. RM

ACCESSION NR: AP5020969

UR/0190/65/007/008/1400/1405

541.64+66.095.26+678.84

AUTHOR: Gusel'nikov, L. Ye.; Yegorov, Yu. P.; Nametkin, N. S.; Polak, L. S.
Chernysheva, T. I.

TITLE: Synthesis and polymerization of certain polyfunctional vinylsiloxanes

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 8, 1965, 1400-1405

TOPIC TAGS: vinylsiloxane, polymerization, cyclopolymerization, organic synthetic process

ABSTRACT: The possibility of obtaining linear high molecular weight polymers by polymerizing polyfunctional vinylsiloxanes was investigated. Tetra- and hexa-functional monomers were synthesized by hydrolysis of the appropriate vinyl-chlor(ethoxy)silane and cohydrolysis of mono- and di-functional vinylmethoxysilanes. 1,3-Divinyl-1,1,3,3-tetramethyldisiloxane, 1,3-divinyl-1,3-dimethyl-1,3-diphenyldisiloxane and 1,3,5-trivinyl-1,1,3,5,5-pentamethyltrisiloxane were synthesized and then subjected to polymerization initiated by γ -irradiation or by tertiary butyl peroxide. The polymers produced by either method were essentially the same. Soluble high molecular weight polymers were produced, but the

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L 64555-65

ACCESSION NR: AP5020969

3

polymerization yield was reduced as functionality of the monomer increased. IR spectra of the monomers and polymers and the decrease in residual unsaturation led to the conclusion that cyclopolymerization took place in addition to polymerization at one vinyl group of the monomer. Orig. art. has: 3 figures, 1 table, and 2 equations

ASSOCIATION: Institut neftekhimicheskogo sinteza AN SSSR (Institute of Petrochemical Synthesis, AN SSSR)

SUBMITTED: 17Sep64

ENCL: 00

SUB CODE: OC, CC

NR REF SOV: 004

OTHER: 013

Ind
Cond 2/2

ACC NR: AP0010121

(A)

SOURCE CODE: UR/0190/00/000/003/0553/0556

AUTHOR: Konobeyevskiy, K. S.; Gusev'nikov, L. Ye.; Nametkin, N. S.; Poiak, L. S.; Chernysheva, T. I.

52

ORG: Institute of Petrochemical Synthesis, AN SSSR (Institut neftekhimicheskogo sinteza AN SSSR)

TITLE: Investigation of radiation polymerization of polyfunctional vinyl-siloxanes

SOURCE: Vysokomolekulyarnyye soedineniya, v. 8, no. 3, 1966, 553-556

TOPIC TAGS: radiation polymerization, vinyl siloxane, siloxane, monomer, polymer, styrene, graft copolymer, vinyl plastic

ABSTRACT: The paper deals with radiolysis, polymerization, and the effect of Gamma rays on monomeric polyfunctional vinyl siloxanes. The existence of stabilized free radicals confirms its microgel nature. The possibility of preparing graft copolymers is demonstrated by initiating styrene polymerization with microgel of 1, 3, 5-tri-vinyl-1, 3, 5-pentamethyltrisiloxane. Orig. art. has: 3 figures and 1 table. [Based on authors' abstract.] [MT]

SUB CODE: 07/ SUBM DATE: 24Apr65/ ORIG REF: 002/ OTH REF: 006/

Card 1/1 B1G

UDC: 66.095.26+678.745

1. 22746-66 EMT(m)/EPF(n)-2/FWP(j)/T/EWA(h)/EWA(l) IJR(c) CG/RM

ACC NR: AP6010122

SOURCE CODE: UR/0190/66/008/003/0557/0559

AUTHOR: Boken, Yu.; Gusel'nikov, L. Ye.; Nametkin, N. S.; Polak, L. S.; Chernyashaeva, T. I.

ORG: Institute of Petrochemical Synthesis, Academy of Sciences SSSR (Institut neftekhimicheskogo sinteza AN SSSR)

TITLE: Radiation-induced polymerization of polyfunctional allylsilanes

SOURCE: Vysokomolekulyarnyye soyedinediya, v. 8, no. 3, 1966, 557-559

TOPIC TAGS: radiation polymerization, radiation effect, temperature effect, conversion rate, monomer, silane, allylsilane

ABSTRACT: An experimental study of the effect of solvents, dose rate, and temperature on radiation-induced polymerization of diethyldiallylsilanes (DEDAS) was made. The dependence of shrinkage of the system on the radiation dose, in the process of radiation-induced polymerization of various diallylsilanes, was determined by the dilatometric rate of 2.5 ml and the scale value of 0.01 ml at 25C, and the dose rate of 350 rad/sec. The shrinkage of the DEDAS system at the dose rate of 700 r/sec and at 50C was determined by the dilatometer scale rate of 0.005 ml. The effect of solvents was determined by comparing the yield of a polymer in the presence of solvents to the yield of a polymer in bulk polymerization, using the same dose of radiation. The dose rate and activation energy were plotted against the monomer con-

Card 1/2

UDC: 66.095.26+678.745

L 22746-66

ACC NR: AP6010122

version rate in the initial stage of the polymerization (up to a 15% yield). Orig.
art. has: 3 figures and 1 formula. [Based on author's abstract.] [AM]

SUB CODE: 07, 20/ SUBM DATE: 24Apr65/ ORIG REF: 002/ OTH REF: 005/

Cord

2/2

28672

S/020/61/140/002/017/023
B103/B101

5.3700

AUTHORS: Nametkin, N. S., Topchiyev, A. V., Academician, Chernysheva, T. I., and Lyashenko, I. N.

TITLE: Addition of hydride silanes to allyl amine

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 140, no. 2, 1961, 384-386

TEXT: The authors studied the addition of the following hydride silanes to allyl amine: triethyl silane, tripropyl silane, tributyl silane, dimethyl-phenyl silane, diethyl-phenyl silane, methyl-phenyl silane, methyl-diphenyl silane, ethyl-diphenyl silane, triphenyl silane, and triethoxy silane. Addition was carried out in the presence of chloroplatinic acid as follows: $R_3SiH + CH_2 = CHCH_2NH_2 \rightarrow R_3SiCH_2CH_2CH_2 - NH_2$. Table 1 shows that hydride silanes with alkyl radicals on the Si atoms are added with a higher yield of allyl amine than silanes with aromatic substituents. The infrared spectra of nos. 1 and 3 showed that the resulting products are primary amines. The same was confirmed for no. 3 by potentiometric titration. This indicates that the silanes are added to the double bond of the allyl

Card 1/2

28672

S/020/61/14C/002/017/023
B103/B101

Addition of hydride silanes ...

group, the amino group remaining unchanged. There are 1 figure, 1 table, and 3 references: 1 Soviet and 2 non-Soviet. The two references to English-language publications read as follows: J. L. Speier, US. Pat., 2, 762, 823, Chem. Abstr., 51, 7416 (1957); C. Eaborn, Organosilicon compounds, London, 1960, p. 214.

ASSOCIATION: Institut neftekhimicheskogo sinteza Akademii nauk SSSR
(Institute of Petrochemical Synthesis of the Academy of Sciences USSR)

SUBMITTED: May 20, 1961.

Table 1. Legend:

- a) consecutive number;
b) compound;
c) vitrification temperature;
d) melting point;
(1) boiling point;
(2) found; (3) calculated; (4) yield.
Card 2/2

Соединение	Т. кип., °С/мм	d_4^{20}	n_D^{20}	MR_D		Выход, %
				найд.	выч.	
(C ₂ H ₅) ₂ SiCH ₂ CH ₂ CH ₂ NH ₂	81—83/4	0,8321	1,4523	56,16	56,54	62,6
(C ₂ H ₅) ₂ SiCH ₂ CH ₂ CH ₂ NH ₂	106—108/4	0,8288	1,4580	70,64	70,79	54,2
(C ₂ H ₅) ₂ SiCH ₂ CH ₂ CH ₂ NH ₂	170—174/6	0,8291	1,4591	84,72	84,68	86,6
(CH ₃) ₂ C ₂ H ₄ SiCH ₂ CH ₂ CH ₂ NH ₂	97—99/2	0,8382	1,5162	62,40	62,85	27,0
(C ₂ H ₅) ₂ C ₂ H ₄ SiCH ₂ CH ₂ CH ₂ NH ₂	120—122/2	0,9356	1,5189	71,82	71,85	50,1
CH ₃ (C ₂ H ₅) ₂ SiCH ₂ CH ₂ CH ₂ NH ₂	206—207/7	1,0159	1,5721	82,60	82,65	31,9
C ₂ H ₅ (C ₂ H ₅) ₂ SiCH ₂ CH ₂ CH ₂ NH ₂	Т. стекл. 12°					32,7
(C ₂ H ₅) ₂ SiCH ₂ CH ₂ CH ₂ NH ₂	Т. пл. 90—101°					30,4
(C ₂ H ₅ O) ₂ SiCH ₂ CH ₂ CH ₂ NH ₂	103—104/2	0,9474	1,4225	59,43	59,18	10,0

L 32659-66 EWT(m)/EWP(j)/T IJP(o) RM

ACC NR: AP6015057

(A)

SOURCE CODE: UR/0190/66/008/005/0921/0925

46

AUTHOR: Nametkin, N. S.; Chernysheva, T. I.; Pritula, N. A.; Znamenskaya, E. N.

8

ORG: Institute of Petrochemical Synthesis, AN SSSR (Institut neftekhimicheskogo sinteza AN SSSR)

TITLE: Oligomeric organosilicon compounds with phenylene links

SOURCE: Vysokomolekulyarnyye soedineniya, v. 8, no. 5, 1966, 921-925

TOPIC TAGS: acetylene, benzene, ~~polymer~~, polymer chemistry, organosilicon compound, LINEAR POLYMER, OLIGOMER

ABSTRACT: Exemplified by the interaction of 1,4-bis-(diorganosilyl) benzenes with acetylene and 1,4-bis-(diorganovinylsilyl) benzenes with silicon dihydroderivatives, the principal method of obtaining the linear polymeric products with phenylenecarbon and phenylenesilicon lines was demonstrated. Orig. art. has: 3 figures and 1 table. [NT]

SUB CODE: 11, 07/ SUBM DATE: 24May65/ ORIG REF: 011/ OTH REF: 005

Card 1/1 BLG

1. CHERNYSHEVA, T. M. Eng. ; KABANOV, M. F., Eng.
2. USSR (600)
4. Ball Bearings
7. Substitutes for Diesel fuel in grinding ball bearings. Podshipnik no. 9, 1952
9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

CHERNYSHEVA, T.M.

Improving the preservation of metal products. Podshipnik '53, No.3,
15-19. (MLRA 6:3)
(CA 47 no.19:9890 '53)

CHERNYSHEVA, T.M.

Economical emulsion for cooling tools and products during machining.

Stan. i instr. 24 no.6:24-25 Je '53.

(MLRA 6:7)

(Machine tools)

LUKIN, A.M.; ZELENICHKO, G.I.; CHERNYSHEVA, T.V.

Chlorophosphonate III, a new reagent for strontium. Zhur. anal.
khim. 19 no.12:1513-1515 '64 (MIRA 18:1)

1. All-Union Scientific-Research Institute of Chemical Reagents
and Specially Pure Chemicals, Moscow.

5(3)

SOV/153-58-5-6/28

AUTHORS:

Fedoseyev, P. N., Ignatenko, L. S., Chernysheva, T. Ye.

TITLE:

On the Combustion Methods of Highly Volatile Substances in Quantitative Elementary Analysis (O sposobakh sozhzheniya legkoletuchikh veshchestv v kolichestvennom organicheskom elementarnom analize)

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1958, Nr 5, pp 42-45 (USSR)

ABSTRACT:

The combustion of highly volatile and rapidly decomposable substances forms a complex problem. The authors criticize the individual methods suggested by various scientists (Refs 1-12). The two authors mentioned first devised methods of quantitatively determining carbon, hydrogen, and nitrogen using a vacuum (Refs 13-16) in organic substances. It does not need any expensive apparatus; the methods are simple, accessible, reliable and sufficiently accurate. Highly volatile substances can be burnt without noticeable losses. The weighed portion of a highly volatile liquid in a sealed glass ampoule is first put into a special copper shell (Fig 1). The two halves of the shell can easily be telescoped and have openings. The shell containing the ampoule is introduced into the combustion tube

Card 1/3

SDV/153-58-5-6/28

. On the Combustion Methods of Highly Volatile Substances in Quantitative Elementary Analysis

and the ampoule is crushed by shoving together the two halves. Figure 2 shows the device used. After the analysis had been finished the shell together with the splinters of the ampoule is removed from the combustion tube. Table (p 44) shows the results of the analyses of benzene, isooctane, n-heptane, hexane, cyclohexane, and cyclohexanone according to the method recommended. A. P. Terent'yev suggested new devices (steel springs etc.) for crushing the ampoule (Fig 3). This method was tested at the laboratory of the authors, who found it to work well. There are 3 figures, 1 table, and 16 references, 8 of which are Soviet.

ASSOCIATION: Institut khimii AN Turkm. SSR i Nikolayevskiy korablestroitel'-nyy institut, Kafedra khimii (Institute of Chemistry, AS Turkmenskaya SSR, and Nikolayev Ship-Building Institute, Chair of Chemistry)

Card 2/3